

On meaning

a collection of writings relevant for the subject

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1. Hand and imagination

manipulation as the basic dynamic underlying displacement
essay

Content

Abstract

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Useful quotes

The aim

Hands

What are hands used for

Using implements also occurs in other animals

The basic patterns guiding behaviour

- First step: primary motivated meaning
- Second step: the influence of the hands on the formation of meaning
- The third layer: the use of implements

Difference in perspective, the result of development

Different in what respect?

The effect on the basic logic

- The transition from being bound blindly completely to the ability to make a choice
- The minimal program as a relevant approach
- Freedom of choice embedded in operations
- From being to having

Time to resume

Four levels of meaning

On the status of the object

It needs to be simple and elegant but not in all cases

The changed relation, characteristics and abilities

Conclusion, the twofold aim of this essay.

Abstract

The ability to provoke in the experience displacement in space and time can without much hesitation be seen as a cornerstone of what makes a hominin really human. The focus will be directed on characteristics within the reach of the public eye but significantly testify of a radical change in the interpretive view on

the environment. The attention will be focussed on the material features themselves, the way they invite to manipulate and what all this unveils about a new way of negotiating the world. But all this could not be thought without taking the primordial role of the hands into account as the tangible first line interface onto the environment. The hands take an important part of the introduction, not in the status of introductory stepping stone but as the necessary condition for all further development. This exposition takes the form of an essay allowing room for creative thought.

Preliminary

In publications on the origin or on characteristics of language, it appears as a given no questions asked. Take Andrew Smith "The controversy over the structure of early human language, and its subsequent transformation into modern language (...)" (in Arbib & Bickerton, 2010:99). Nothing seems to be said against the grain. The observation made might come as nitpicking.

Over time I developed sensitivity for expressions which at first glance seem quite natural. They quite often organize understanding in a particular way which after all is not natural.

Smith's quote illustrates this strikingly. Language seems to be present either premature or full blown but present from the very first moment on without questioning. One might object that the subject is not only language but also early or protolanguage and, isn't that the stepping stone suggesting an evolution starting from scratch? Indeed but observe what is getting suggested by Bickerton, an authority on language evolution. He refers to word like units with simple atomic meanings associated with basic pre-existing cognitive concepts. Wray even thinks in that stage of development of complex propositions (ibid:100). But simple or complex, units are presented as if they already exist. Question is where do these come from and why does one evolutionary branch seem to possess these and other species most akin even demonstrating similar use of implements, do not?

In a scenario like this there seems to be a period of absence of language and then all the sudden – even when presented as protolanguage – a period in which it is present. Where did it come from? Out of the blue or by genetic mutation? In the latter case there is no longer a problem. In spite of being outdated one might as well maintain Descartes' option considering language as a gift from god enabling man to express the thoughts produced by reason.

However this subject might be very intriguing I am not looking for causal factors. The aim is to raise an understanding about the processes taking place prior to the condition as pictured by Bickerton. What brought a hominin from being collapsed and entangled with the event at hand into the condition pictured as protolanguage by Bickerton. What are the procedures and steps bringing that within reach?

If the execution of these procedures deserve the label language is a different matter altogether. I prefer the idea that particular skill most probably accidentally came into being and the usefulness of its effect promoted further development. At one time it reached such a degree of sophistication that a proper label got considered. The term language refers to a form of action in which the movement of the tongue (Latin: lingua) was involved. In that sense it comes down to a type of action.

Ingold scornful considers language taken as a (mental) faculty an invention of linguists (2002).

Useful quotes

The quotes listed serve as relevant illustrations or as arguments provoking to be commented.

1. Displacement: crossing the frontier

I am not suggesting that protolanguage, at its birth, had the unlimited capacity for displacement that forms so salient a feature of language. But the emergence, at some specific time and place, of the first signals that did not refer explicitly to the here-and-now would have represented the crossing of a clearly marked frontier rather than a walk through a gradually changing landscape. (Arbib & Bickerton, 2010:170)

2. Displacement: all-or-nothing

Displacement, for instance — the capacity to refer to objects or events not physically present — is an all-or-nothing category, like marriage or imprisonment: you're either married or not, in jail or out of it, and signals either refer exclusively to the here-and-now or can go beyond it. (ibid:170)

3. Wallace's problem

Another crucial new feature was a departure from the direct linkage with evolutionary fitness that characterized all other communication systems. The communication system of each species represents something tailor-made to fit the adaptive needs of that particular species. It comprises just those signals that relate directly to the fitness of species members, and excludes any that don't contribute to such fitness. In language, no units in and of themselves relate in any way to evolutionary fitness; language as a whole may contribute to fitness, and words or sentences used in particular contexts on particular occasions may enhance fitness, but in the vast majority of circumstances they will bear no direct relation to it. (ibid:170)

4. Animals not referring functionally

But if signals with functional reference are seen as milestones along a road to language, the fact that no signal within the repertoire of the great apes exhibits functional reference becomes puzzling. If, on the other hand, animals simply choose signals that directly impact their fitness, several things become clearer. (ibid:172)

5. The relevance of displacement questioned

It also becomes clear why non-human signals can't combine can't displace and so on. They can't do these things, not because the animals concerned lack the capacity to execute them, but because the signals themselves evolved for purposes that make combination, displacement etc. wholly irrelevant. The signals are responses to events or situations in real time that might impact positively or negatively on the fitness of an individual animal, (ibid:172)

6. Asking the right question

To understand how protolanguage emerged, we should avoid the question, “How did protolanguage emerge?” Instead we should ask how, and under what selective pressures, human ancestors became able to move from signals linked with fitness-affecting events to signals whose main function was to transfer factual information that did not require an immediate response. (ibid:172)

7. Some characteristics of full blown language

Open-endedness, creativity, combinability, displacement, symbolism were just some of the properties that had to be acquired. (ibid:172)

8. Bees and ants and displacement

There is good reason to choose displacement as the first protolinguistic development, since it is already found in a handful of non-human systems, principally (so far) in those of bees and ants (ibid:173)

9. The importance of the niche

I cannot overstress the need to take into account the ecological niches occupied by pre-human species; no-one should look at protolanguage before taking into account niche construction theory (ibid:174)

10. Processes to combine already shared with other mammals

What was required for these tasks might in principle represent (or be derived from) either capacities shared with other animals but selected for novel purposes, or novel, purpose-built capacities unique to the human species. But the null hypothesis clearly is that given symbolic units to combine, the processes used to combine them were ones of a fairly general nature, already present in the genome and shared with other mammalian (and perhaps even avian) species. (Bickerton, D. 2009. *Biological foundations and origins of syntax*. The MIT Press. p.12)

11. Merge and recursion, some task specific mechanism nothing to do with language

Merge involves recursion. It has been claimed in one widely cited paper (Hauser et al. 2002) that it does, and that recursion is unique to humans, requiring us to assume either a special mutation or the exaptation of some task-specific mechanism that predated—hence originally had nothing to do with—language. In linguistics, recursion is generally defined as the ability to insert one structure inside another of the same kind (Bickerton, 2009:6, *Biological foundations...*)

12. We submit that a distinction should be made between the faculty of language in the broad sense (FLB) and in the narrow sense (FLN). FLB includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for recursion, providing the capacity to generate an infinite range of expressions from a finite set of elements. We hypothesize that FLN only includes recursion and is the only uniquely human component of the faculty of language. We further argue that FLN may have evolved for reasons other than language; hence comparative studies might look for evidence of such computations

outside of the domain of communication (Hauser, Chomsky, Fitch. 2002. *The faculty of language: what is it, who has it, and how did it evolve?* Science – quote from the abstract)¹

13. (...) he (Chomsky) describes the operation of merge as “an indispensable operation of a recursive system” (2001). Add bifurcation as described by Richard Kayne (1984) to it and furthermore the model of Chinese boxes that fit together (Calvin & Bickerton, 2000) and all this results in the core of that (minimalist) program (Hauser et al. 2002) (in J. Gilbert; *The Forgotten Transition*; 2018:105)

The aim

The aim is to make clear the most fundamental building blocks and the dynamics involved in provoking an experience bearing the character of a displacement in space and time². The quotes listed above might become helpful in contributing that endeavour. It is clear that this discussion is not about language in the first place. It is about the introduction of the ability to introduce an experience characterized by a displacement in space and time. Language is and will be mentioned only in so far characteristics from one and the other seem to be related or similar.

It is unclear to me why and how exactly this took place. But it is within reach to point out the changes such as the occurrence of object patterns which could not suggested without the stance of taking distance. It is possible to describe the characteristics, the functions and effects of these changes.

In quote 5 an important observation in that respect is offered “It also becomes clear why non-human signals can’t combine, can’t displace and so on. They can’t do these things, not because the animals concerned lack the capacity to execute them, but because the signals themselves evolved for purposes that make combination, displacement etc. wholly **irrelevant**. The signals are responses to events or situations in real time that might impact positively or negatively on **the fitness of an individual animal**, (...)” (in Arbib & Bickerton, 2010:172)

The signals expressed are functional in relation to the fitness of the animal; the characteristics of signals expressed by humans are irrelevant in that perspective.

The first part of this sentence can be accepted without reservation. Any organism strives for survival. The second part is in my opinion correct to some degree. Also human signals can underpin action in the perspective of survival. A massive number of the expressions uttered are indeed irrelevant in that respect. Important is that Bickerton draws the attention to the fact that non human animals don’t “combine, displace and so on”. Not in the sense that they could not make use of it but that these never come into being. Bluntly, these modes do not exist in the lives of these organisms.

¹ Trained linguists will argue that there are many more characteristics involved in language. As explained in *The Forgotten Transition* (ref) the rules and operations underlying language can be distinguished into two groups: the basic mechanisms underpinning language as a human practice (merge, bifurcation, recursion) and local rules (for instance head first or last, verb or noun as dominant element) or dependencies having involved in the ordering of semantics (binding, empty categories, movement). In this contribution the focus is only on the basic mechanics.

² There are other terms in use. Tulving (1984) speaks of time travel, Hurford (2014) of offline representation and Gärdenfors (2014) somewhat similar of detached representation.

Why do these exist in the lives of the animal called human?

That is the problem Alfred Russell Wallace struggled with (quote 3). The human animal seems to have abilities exceeding the needs related to survival.

But the question “why” does put us on the wrong leg. It hints in the direction of a reason, as if there necessarily must be a reason. The idea something popping up without any purposeful reason seems to be out of the question.

But why? Why should it be impossible that a species stumbled over some experience which proved to be useful? Not even useful at first sight but simply surprising. As in the case of an implement getting associated with the meaning of a particular occurrence; the presentation of that implement provoking an experience characterized by reference to some event out of the actual now and away from the local ground. This is what is meant by “displacement”.

Bickerton observes that this not even completely new. Ants and bees offer a demonstration.

This illustration is most probably not appropriate. Ants are laying down a trail of chemicals, called stigmergy. This might be different for the behaviour of bees which might be based on genetic heritage or/and learning processes in which conditioning plays a central role, but I have to admit not being an expert in that matter. Clear is that the mentioned behaviour is direct while in the mode of displacement as seen in humans consideration is of importance.

This at the same time is the stepping stone into the basic and necessary condition enabling displacement as the human exhibits. Consideration; a perspective characterized by taking distance in relation to something; in short aboutness are the keywords. The question is how did it come into being and is there an instance where this perspective, this attitude can be observed? The how question can only be answered in speculative way which does not open a fruitful path to pursue this contribution. But “how” can also be understood in another sense, not gauging into the origin but about the context it might be emerging from. This brings us to the second part. The answer lies unconcealed: the tools brought forth by the hominin line which would evolve into the human species clearly express that feature. The application of corrections to a tool implies, stronger even: is synonymous with a taking distance. The tool being improved has to be looked upon in a way taken literally or considered if another more mental register is preferred. It has to be held at a distance inviting inspection. This condition might be designated as spatially organized perspective, in short spatial cognition.³ It is a stance quite different to the incorporation as exhibited by other tool using animals. This is indeed the type of displacement referred to by Bickerton dealing with proto language however as put in the preliminary remark I would not call this language, even be reluctant to call this protolanguage. Proposed is the option considering it a spin off effect from an occurrence in which a particular event got associated with an implement used in a particular action is preferred. It is in that setting indeed that particular characteristics of a Gestalt figure are becoming prominent and isolated giving rise to what becomes perceived as a clearly delineated unit.

In Western culture we are inclined to consider this as something substantive, something standing on its own, devoid of any context. But in order to understand its nature and function properly in spite the fact it appears sharply delineated may not be deprived of its context. That object perceived from a perspective of

³ Spatial cognition is defined as the ability to perceive spatial patterns, organize action in space, and understand spatial relationships (Wynn, T. & Coolidge F.L. 2016. Archaeological insights into hominin cognitive evolution. *Evolutionary Anthropology* 25:204.

taking distance only obtains its delineated character embedded in a movement of mediated manipulation executed by an actor with his particular anatomical infrastructure. Even taken more broadly: from an all encompassing scene consisting of nothing else than sharply delineated objects all prone to manipulation.

As the result of some transition the world perceived changed a scene the perceiving organism collapsed with into a scene presented on some distance of manipulable entities.

By this the basic pattern is shown: mediated action, objects and the perception of a distance as an experience. This is the setting, the dynamic and the building blocks.

The study of the potential is important in two ways. First of all it enables to describe and to understand the opportunities emerging from this particular dynamic organisation. In second instance the object functioning as a second order stimulus opens the possibility to provoke displacement. As a provocative instance, in prospect one could also refer to a carrier of semantic payload. The point made is that the dynamics involved in the manipulation of objects are – being the carrier mentioned – the same underlying construction of global scene in which different displacement contents are getting manipulated. So studying the dynamics of action is at the same time exposing the dynamics involved in the manipulation of scenes of displacement. In Bickerton's terms it might be called the dynamics underlying protolanguage.

Hands

Trying to sketch out the basic pattern as is the aim of this text, attention should go to the fact that the organisms in question do have and make use of ends of limbs that are able to grasp, hold and move whatever could be grasped, held and moved. Humans are hand centred in space⁴. The latter is not to be understood in a Euclidean⁵ or Newtonian sense but sensory and motor defined. In Euclidean sense space is a novelty only existing in the thinking brought forth by the human kind. Space on the level of experience shared with species most akin and in so far this naming could already be used in that context comes down to the extent the eye can catch, the reach of locomotion and of the grasping hand in so far hands are present. So space is more a dimension of perception and of movement rather than an imaginative framework onto which orienting parameters can be set out.

The fact being equipped with hands is so trivial that it is overlooked altogether. However the importance of the logic of the hands cannot be appreciated enough. It could not have occurred in animals with hooves or in absence of limbs.

The human way of negotiating the world does not come out of the blue, it is not neutral nor independent and objective. It is harnessed by the particularities of the body. The hands provide the interface where the negotiation of the environment takes place⁶. It sets and specifies the blueprint of the development at least

⁴ Cfr. N.P. Holmes in Z. Radman, 2013:57-70

⁵ Wynn & Coolidge, 2016 are premature in relating spatial cognition to Euclidean spatial thinking. Because that type of understanding is only possible much later when the use of implements as secondary stimuli provoking displacement and thus projection got introduced. Silverman (1992, 2000) suggested that an Euclidean framed awareness could be based in the division of labour of hunter gatherers.

⁶ In its own context not to be confused with what is explained here. Following Anaxagoras Aristotle considered the hand the tool of tools. But he also considered the hand as the product of the intellect and not the intellect brought forth by the possession of hands (De Anima, 432a).

of motor directedness, perceptual focus and cognitive patterns and strategies. In short, the importance of the type of embodiment is paramount.⁷

It could be noticed that the position and contribution has been observed but apart of the fact that the hands fulfil a central role in the existence of the human, is it well worth all the fuzz?

This misses the point completely.

Being the actual first line interface the hand centred orientation is far reaching. It implies that all interventions onto the world are framed within the logic of the abilities of the hands in cooperation⁸. This easily escapes us because it is our very nature, the way we approach the environment. It is like the body of water for the fish. Before being characterized as “speaking”, for anything humans are manipulating beings. The following could help. What do all living creatures have in common? Being primary motivated, i.e. maintaining life and procreation⁹. Several groups of species however differ in the way that motivation is getting realized. They differ in the way the burdens laid upon by the particular environmental conditions are negotiated. A bird has wings and a beak. It moves by flying and feeds by using the beak¹⁰. That is the systematic underlying its existence. That logic to use an inappropriate word is different for different types such as a predator like in the case of a tiger, a grazer like an antelope, the crocodile, the snake etc. What is that basic pattern underlying negotiating the environment for the creature which in the end will be called human? For the species most akin the hands have a twofold function. Chimps are knuckle walkers so hands are used to move around. But they are also used to for instance hold on the branches of trees, grasp fruit or a prey, hold the offspring, in some cases even handle an action supporting implement. For what would become the human line the function of locomotion has been divorced of the function of holding and grasping. Locomotion brings where the food is, the hands specialize in handling it. This might be an all too simple illustration but it comes down to the fact that main functions such as locomotion and manipulation are getting divorced and that being the case they specialize along their track. The upright walking can be considered a specialization, the same goes for the applications of the hands. They specialize in executing interventions. In summery, they are the first line specialists in the act of negotiation. But that has a consequence of major magnitude. It actually means that

⁷ The following contrasting situation illustrates the importance. For a grazer the head is directed to the ground, the lips pulling the grass, the eyes directed sideways alert for eventual dangers. The world experienced is a conglomerate of ground directedness, grass and caution. Something similar is the case for the hominin being bipedal and provided with hands to grasp but directed in a very different sense.

Further the following are of relevance in relation to the hand as channel of approaching the world: Radman Z. (ed), 2013, *The hand an organ of the mind*; Napier, J. 1962, *The evolution of the hand*, *The Scientific American*; Cagli & Coraggio, 2008, *What the draughtsman's hand tells the draughtsman's eye*, *International Journal of Pattern Recognition and Artificial Intelligence*; Tocheri et al. 2008, *The evolutionary history of the hominin hand (...)*, *Journal of Anatomy*; Marzke M.W., 1992, *Evolutionary development of the human thumb*, *Hand Clinics*; Almécija & Sherwood, 2017, *Hands, brains and precision grips*, *Researchgate*.

⁸ The trajectory of the human evolution is brought forth by the use of hands; it does not as a ghost out of Allahadin's lamp emerge from the workings of the neural tissue. Compare with Trivers observing that the brain is functional for surviving not in the task of producing knowledge (2002).

⁹ Cfr. Darwin, *The Origins...*, recapitulation and conclusion “(...) all been produced by laws acting around us (...) growth with reproduction”

¹⁰ It is more then often said that man is special. But what to think of birds able to fly? Isn't that not even more surprising?

all further refinements originate within that framework and cannot do anything else then follow the “logic” of it.¹¹

The suggestion is that in the further development two stages can be discerned as will be explained later. In first instance the taking form of a perceptive configuration which will adapt to and fit the act of manipulation and secondly the use of the form given artefact as a stimulus of second order thus provoking displacements in time and space in the experience.

On closer inspection and way ahead of what has to come, how difficult is it to recognize in the act of speaking the manipulation of objects with the purpose of provoking a certain effect? Is it too bold to state that this is an example of negotiation?

At the risk of repeating myself this pattern is so low level or first line that it goes unnoticed, moreover veiled by a historical heritage that it is all about the ultimate truth far away from vulgar manipulations.

In short whatever the semantic discourse the human enrobes his existence in, his way of behaving, his way of being in the world can from a technical point of view be understood as a form of mediated manipulation, the logic of the hands providing the overall framework.¹²

What are hands used for

What were the hands used for? To grasp branches while moving in the canopies, to grasp food, to hold the offspring, occasionally pick up a nodule and use it as a hammer to break the shell of a nut.

Hands come in pairs doing different things, a division of labour one performing a holding task, the other some action onto what is held.

Apes show a hand lateral preference or dominance on the level of the individual while in the human species for 85% the left hand is taking the holding function while the right acts. According to Uomini (2009) the evidence suggests that this may have emerged through the social transmission of increasingly complex, bimanually differentiated, tool using activities.

However remarkable it probably diverts the attention into the wrong direction. We should focus at the fact that the use of action supporting implements is not a human prerogative. Some of the closest relatives do. There is a common base. This is also what Bickerton refers to when commenting on language. This also can be applied on displacement which will become discussed later. “What was required for these tasks might in principle represent (or be derived from) either capacities shared with other animals but selected for novel purposes, or novel, purpose-built capacities unique to the human species. But the null hypothesis clearly is that given symbolic units to combine, the processes used to combine them were ones of a fairly general nature, already present in the genome and shared with other mammalian.” (2009:12)

The point made is the hominin and the line which eventually will become the human species share the basic conditions. This in some cases even goes for the use of tools.

¹¹ The automobile whatever the actual degree of sophistication could only be developed within the logic of the abilities provided by the introduction of the wheel.

¹² Let us burry the picture of the human provided with special seemingly esoteric “mental” gifts and try to understand behaviour as a particular motor based way of negotiating the world.

Using implements also occurs in other animals

Capacities shared with other animals provide the most basic layer. That seems obvious.

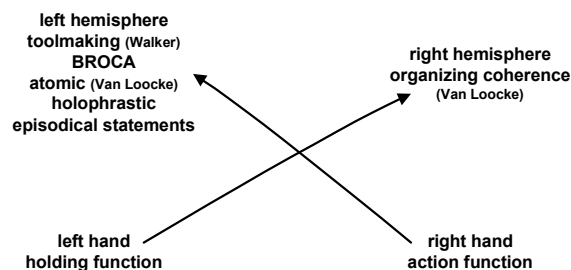
On top developed novel purpose built capacities. Question is to what purpose?

Could that be language directly as Bickerton seems to suggest be it via an introductory phase of protolanguage? Or could it be displacement directly? Or what about the suggestion that the novelty developed in the context of something else and displacement came into being as an accidental spin-off?

That suggestion leads me to Alan Walker in "The wisdom of the bones". He notes that results obtained from modern techniques used to explore brain activity (specifically positron emission tomography, or PET) show that the area of the cortex surrounding Broca is also related to manipulation of the **right** hand. This means that the development of this area in the first humans was an adaptation related not to speech, but to dressing stone as a candidate for that something else mentioned (in Arsuaga & Martinez, 1998:242). The reference in this quote made to the function of the right triggers another thought. I realize that I am jumping rather haphazard but allow me to deal with this first and then return to the basic building blocks and dynamics.

The move made now is somewhat similar to reverse engineering because the following quote is about language as a final condition in the phylogeny but it may as well be relevant for motor patterns (in an earlier stage). "The statements formulated from the left part of the brain have mostly an 'atomic' character. They depict what is happening here and now in a few evident sentences. The left part seems not to be able to produce a coherent narration. The right brain part however seems to have codes of *a not lingual nature* (stress added) at its disposition, allowing it to organize the atomic sentences into a coherent history. So, producing a coherent narration seems to imply more than the linguistic centres situated in the left brain part." (Van Looke, 2008:436) The left part of the brain is related to the right hand. What is called atomic referring to here and now scenes might on the level of semantics be called holophrastic. Both schemes joined provide a striking pattern.

The right hand engaged in meaningful single units corresponds with holophrastic statements as the content of the left hemisphere. The left hand is occupied in the holding (together) position and is related to the right hemisphere which is able to provide coherence.



This scheme could be significant for a theory of language in which the motor abilities of the hand(s) play a central role. In that sense quotes 11 and 12 might be of relevance " (...) recursion is unique to humans, requiring us to assume either a special mutation or the exaptation of some task-specific mechanism that predated—*hence originally had nothing to do with—language.*" (stress added) And "We hypothesize that

FLN¹³ only includes recursion and is the only uniquely human component of the faculty of language. We further argue that FLN may have evolved for reasons other than language hence comparative studies might look for evidence of such computations outside of the domain of communication (Hauser, Chomsky, Fitch. 2002).¹⁴

Accepting the initial idea that man originates as a hominin then unless a divine intervention or a mutation is assumed, the most plausible answer is that an already existing strategy must have provided the steppingstone. As Francois Jacob states evolution is not as much revolution but tinkering with already existing capacities (Science, 1977, vol. 196, nr 4295).

Let us briefly return to the scheme above anticipating on what will be coming when referring to meaning by association. The scheme implies two levels. In the first items are held and manipulated with the respective hands fulfilling a particular function. The second layer refers to semantic contents of a holophrastic nature organized and driven by the same dynamic division of roles. Thus both are at the same time different and connected. The peculiar fact is that the material implements are getting associated to the semantic content such that manipulation of the first implies manipulation of the latter (bottom up). This in its own right is already a remarkable fact deserving all attention. But this is not the end of the story. As the semantic content gives rise to a particular experience, both actually being synonymous, that experience in turn can drive the manipulation of material implements (top down). So once a manipulation of that type fired up the dynamic changed into an endless driven feedback circle.

However anticipation on what has to come, it seems the right time have it introduced.

The basic patterns guiding behaviour

Coming back on the factors responsible for framing the way the environment is getting negotiated the question is what the logic of manipulation might be. What are the basic patterns guiding behaviour? A few steps into that development will be suggested.

First step: primary motivated meaning

At the lowest level primary motives are providing meaning. Being the same for any creature it is not a criterion allowing discrimination between abilities of different species. The communality should anyway be kept in mind as the omnipresent meaning giving motor. The organism, any organism is not an idle

¹³ FLN, faculty of language in narrow sense.

¹⁴ From the sixties onwards Chomsky made a dominant mark on the study of linguistics. It seemed for many years as if there was no other approach than his flavour of a universal grammar (transcendental transformation grammar) be it ever in flux, an ever changing theory in progress. There were and are however other schools up and running. Think of the cognitive grammar proposed by Langacker or the theory of mental spaces by Fauconnier. I have been greatly influenced by the ideas on projection as a determining factor in semantics as formulated by Lakoff and Johnson. For an excellent overview on the history of linguistics: Seuren, A.M. 1998. Western Linguistics, a historical introduction. Blackwell.

instance; it is driven in a meaningful way from the very beginning. It would not be wrong to say that life and meaning are two different terms referring to the same.¹⁵

Second step: the influence of the hands on the formation of meaning

For the **second** step it is obvious that the mode in which the burdens of the environment are going to be tackled is determined by the bodily abilities, in short embodiment. The difference in embodiment among species determines the way a particular world will be construed and thus become experienced. It will not be difficult to accept that the world of a bird differs drastically from that of a reptile. Oddly enough this insight seems to be lost in the case of the human. The idea tacitly and persistently lives that the human enjoys an objective and transparent perspective outside the realm of embodiment. But what good reason could there be to accept that conviction, why should the human be different in that respect?¹⁶ Concluding that here man is getting approached in the same way as any other species.

From that perspective the hands as first line if not exclusive interface are of decisive importance.¹⁷ They offer a particular form and abilities bringing forth proper strategies or ways of dealing with aspects of the environment. The environment perceived as problem got in the first instance fired up but the primary motivation. But how this can be tackled can only be defined by the embodiment - in extremis the joined contribution of the hands; hence the expressed conviction that the hands are of decisive importance. Therefore the focus on manipulation opens the major perspective onto what is around. This is providing the all determining blueprint of, the ultimate baseline for what will follow in the further course of the development.

The importance of this might become crystal clear when contrasted with the mainstream idea that the human is foremost characterized by his mental capacities suggesting that the body is some kind of subordinate tool, an instrument to realize the higher capacities. That idea has been put forward by Aristotle. But Wells was right when he wrote in "The War of the Worlds" that the hand was the teacher and agent of the brain.¹⁸ It is the hand indeed moulding the world we access in a definite way.

It can be argued that it is at least equally true that mind goes over body as by postponing the satisfaction of an urgent need. I will not go into the problematic character of the concept of "mind", accept its common sense meaning for the moment. What is meant here and also can be deduced from Well's quote is that the form of and the operations coming forth from the body are primordial constitutive in any sense. They provide irrefutably the blueprint in which framework all development to follow could come into

¹⁵ In that sense the question into the meaning of life is quite weird. It expresses a duality between something existing in its own right on the one hand which on the other is looking for meaning as if it is something absent altogether. That question is on sensible from the condition where composing discourses or scenarios became possible. To that end imaginative displacement in space and time is a necessary condition.

¹⁶ Plato picturing a realm of ideas as the forms of ultimate truth offers the most telling version which has left its footprint on the history to follow. As Alfred North Whitehead observed, the history of Western philosophy is a footnote to Plato. Plato's version however is nothing else then one of the possible answers on the question that stamped Greek and hence all following Western thinking: what is the nature of that what is (unchangeable)?

¹⁷ This is so basic that the terms manipulation and handling, both referring to the contribution by the hands, is used in the most general sense of exerting any kind of influence onto something else.

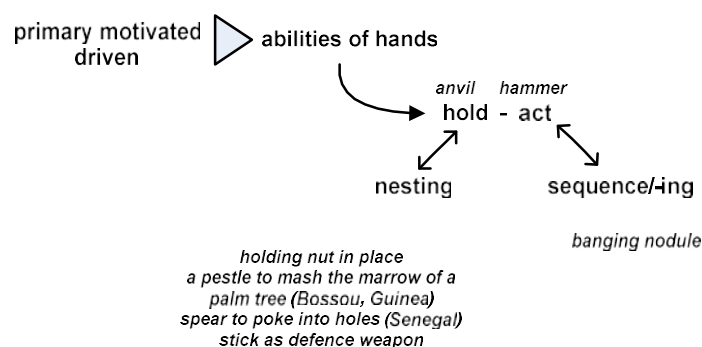
¹⁸ Mentioned by Holmes in Radman (2013:70)

being. But indeed within that frame skills often called mental in kind, can be developed which can engage into actions going against the rules the blueprint itself as by mentally deciding to go on hunger strike. But this capacity to make that decision could ultimately only come into being within that very framework making this opportunity possible.

That is the second step.

The third layer: the use of implements

This too does not emerge from a neutral background but shows a particular and thus meaningful ordering in space and time. One hand holds while the other acts. It implies a division of tasks. Holding and acting takes place in a particular order: in so far both hands are involved there is no action executed before holding but the other way around. Further actions are performed in consecutive steps. Holding expresses yet another relation. It is a mode of nesting one item in the other, boxes into boxes. Might this be the stepping stone into recursion?¹⁹



This is more than a dumb scheme restricted to an application which only can be repeated over and over again.

Besides, the Cartesian suggestion that animals are automatons executing reaction in a mechanical way is flawed. This became convincingly clear by animals solving complicated contraptions in lab settings. As Shettleworth testifies quite simple processes having nothing to do with discursive form of reasoning are able to cope complex problems (2010). That is getting confirmed by research in robotics and artificial intelligence (Moravec, 1988, 1998)²⁰. So this scheme has more in store.

The following observations are relevant.

¹⁹ According to Everett (2005) the Pirahã people living in the Amazon region do not expose recursion in the use of their language. This might indeed be considered the case when language is seen as divorced from the speaker. But taking lingual elements as material units into account the speaker can be considered the holder of material elements and so expose the relation of some thing or instance holding something else.

Further in the FNL Chomsky observes that this might well be the only characteristic and on top of that developed in a context outside the domain of communication (quotes 12,13)

²⁰ Maybe a step too far "Simple heuristics that make us smart", (Gigerenzer & Toth, 1999, Oxford University Press) illustrates the power of rather intuitive approaches (in contrast to these guided by the principles of logical ratio).

Firstly this scheme is applicable on non-human animals too in so far they dispose of hands. Secondly the abilities opened by this coincidence are particular in respect to the global strategies in negotiating the world. As such they are to be discerned from these of grazing animals, strategies applied by avian animals and of these of animals not having protruding limbs. It is a particular way of dealing with the challenges emerging on the borderline of primary motives and what is environmental at hand. Thirdly the implements used by non human animals are simple, not or hardly modified, produced on the spot of action or nearby and aimed at one particular task.

There is yet another observation of utmost importance. In spite of the fact that the line which ultimately would bring forth the human species is akin to hominidae implying that this development starts with the same abilities on the level of cognition and manipulation, the implements used in action at some point testify of a type of adaptation²¹ which is extraordinary to say the least. It reaches much further than a Caledonian crow for instance producing a hook tool.²²

In short, it is unknown what exactly took place but considering that no miraculous intervention took place, the conclusion is obvious: something has changed in particular in relation to the way the environment is getting appreciated. The question is “changed in what sense?”

The argument suggested goes as follows.

The artefacts found in the field by paleo-anthropologists and these used by apes are indeed different but most important both provide the corpus of tangible material prone to observation. These developed in the line which would end in the human could not exist in the form they are without a behavioural, perceptive and cognitive complement. Object and complement are like hand in glove. With that relation in mind the changes observed in the object at hand inevitably testify of changes in the complementary dimension. From this follows that the tailoring of a flint nodule into the form found in for instance Olorgesailie²³ requires a particular perspective, a stance of consideration for which there are no signs in other animals making use of nodules. That stance suggests the holding of the implement to be modified to be held by the agent in front of himself.²⁴ It encompasses in one flow the gesture, the gaze and the experience of distance in relation to what is in front of.²⁵ This is radically different in relation to the intertwinement of an organism engaged into what is of relevance, being centric in the experience of a condition of unity. Running ahead again this is the point of germination for what much later will be called “aboutness”. I do not agree with Bickerton in the fifth quote expressing that non-human animals can in principle provoke displacement but they don’t do it because it is irrelevant in the light of fitness. For displacement to be elicited a readiness to a perspective of distance should be present but that is excluded where full engagement in an event is in play. There is no perspective of distance in there. Distance in that case is to be understood as an attitude of consideration, not as the gap between marks in a geometrical

²¹ Cfr. Marzke (1992); Almeceja & Sherwood (2017).

²² An excellent book on the use of tools by animals, Shumaker, Walkup and Beck, 2011, *Animal Tool Behavior*; Oxford.

²³ Paleolithic archaeological site in the Eastern Rift valley, Southern Kenya. The form is that of an Acheul hand axe, an already sophisticated form but chosen here because earlier types such as Oldovai are prone for discussion about being a real modified tool or not.

²⁴ It reminds of Hegel’s expression “*für sich*”, literally to be understood as holding in front of himself.

²⁵ It is a particularity of the Western analytic view to divide a scene in different substantive elements each to be considered in its own right whereas in the practice of life the viewing eye and reaching hand are one.

frame of reference. Furthermore, as Bickerton explains in quote two: displacement is or is not and this allows to add that the observations of the tools used by non-human animals it clearly is not.

This is the exponential sign for **the third step**.

Before going on, observe that the argument did not take the form of “it happened in order to...”²⁶ but “that experience must have been there otherwise the modifications observed could never have been realized”. The first form implies teleology, the second is a deduction.

Difference in perspective, the result of development

Drawing attention to a difference in perspective in spite of the fact that the species involved are family suggests that this is a matter of development; it is not a natural given condition²⁷. This is getting confirmed by studies in developmental psychology, physiology of seeing and reports on the experience of blind people gaining the faculty of sight. These made unequivocally clear that recognizing and identifying meaningful entities in the environment is the result of experience based and learned processes.²⁸ These studies provide indications that what is seen as meaningful is the product of needs and abilities of the physiology in relation to what – to be understood as ‘chaos’ – is at hand ‘out there’. This is not only a matter of semantics but also of structure. Semantics refers to the difference between a carrot and an egg as food for instance²⁹. Concerning structure the form tools used by humans provide some indications. They are in a sense similar to these used of animals but in another sense quite different.

Different in what respect?

As mentioned the primary motives are the very first factors determining what in the chaotic input is of relevance. One does not have to look out³⁰ for what is of importance; it is selected out and imposed by the basic needs. Being hungry directs the focus on food. The structure or the form it takes can be described in terms of Gestalt-psychology. This approach is not imposed by theoretical presuppositions but is a model which in origin resulted out of research into the basic elements in perception. Form and content can be

²⁶ As in Holloway (1992) explaining that language *had to come into being* as an answer to an ever more becoming complex social organization.

²⁷ The qualification “natural” needs to be specified. It is not referring to the initial condition the human once shared with the other great apes. It has neither to do with nature understood as the raw condition untouched by human intervention. Natural here refers to a condition *attributed* by the human, the quasi romantic idea of virgin earth existing in the appreciation of the human, some condition having affinity with the sublime. In its extreme it is nature as often thought by new age adepts or back to earth defenders of natural grown food

²⁸ Riesen, 1950; Ackroyd et al. 1974/2007; Foley, 1985; Degenaar, 1996; Fine et al. 2003; Gregory, 2003; Jacob & Jeannerod, 2003; Kimchi et al. 2003; Ostrovsky et al. 2009; Held et al. 2011; Huber et al. 2015; Gordon, I.E., 2004, Slater et al. 1990; Uttal et al. 2000; Wertheimer, 1912. Kellman in Gelman 1996 to name some important sources.

²⁹ Or take a grub, for most of the Europeans these appear disgusting while for inhabitants of the rainforest they are appreciated as a delicacy.

³⁰ The inclination to look out for meaning is a human characteristic. Animals do not look out for meaning in that sense. In the case of hominin it is an anachronism, in the case of animals is out of context altogether.

described as that what is considered being relevant to protrude absorbing all attention while what is of no or less importance diffuses into the background. In short, what is salient becomes figure characterized by relevance, fluency and dynamics. The posture of the cat having a mouse in its visual field is one of total concentration, entanglement even. This is no doubt the optimal organization in order to capture the prey. It is however very different to the posture of evaluating consideration needed to apply the appropriate modifications on a silex tool in order to improve its efficiency.

This short impression offers a glimpse into the characteristics which might be attributed to the joint cooperation of eye and hand. The drive bringing forward what is relevant remains unchanged but the focus is directed to formal characteristics affordant in relation to the form of and the reach of the motor abilities of the hand(s).³¹

Edges become clearly delineated fitting the grasping movement, the holding and the active hand.³²

It forces the perception in a particular direction reorganizing the setting and configuration of what is perceived. What is of relevance is retained on the foreground, the basic Gestalt principle remains but it is getting organized in terms or rather forms of manipulable units prone to be grasped. What is of importance in respect of the latter draws the attention becomes salient and delineates a graspable unit.

A process of ungrounding³³ takes place in two directions. On the one hand the graspable form is becoming cut out, clearly demarcated from whatever is surrounding. It is becoming distinct, a denomination derived from the Latin “distare” implying distinction and what is distinct from something else is also at a distance from it. The appreciations “distinct” and “at a distance” are actually one and the same but viewed from a different angle. The form is becoming distinct and at a distance from similar forms and from the grasping hand. So it could indeed be said that the distinction unfolds in two directions: in relation to similar elements and in relation to the perceiving and acting instance. What until

³¹ This is certainly the moment to refer again to the book edited by Zdravko Radman (2013); to the work of E. Marzke 1992; Almeceja & Sherwood 2017; John Napier 1962; Tocheri et al. 2008 and many others. Furthermore the stress lies on the relation hand, eye and affordant element. The forms referred to grow out of that relation and should not be confused with geons part of the model suggested by Irving Biederman (recognition by components).

³² This is a superficial description of the change in perspective elaborated in other contributions such as in *The Forgotten Transition*; *Beyond the material engagement theory*; *Building cognition, objectification as linchpin*.

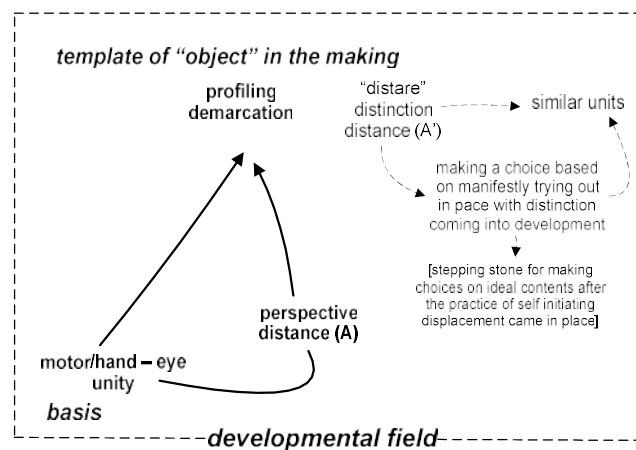
³³ “In the model developed by MacWhinney (1999a), this first level of perspective taking involves the shift from direct perception and action to stored mental representations of perceptions and actions. This is the first step in what I call the “ungrounding” of cognition” (in Givon & Mall, 2002:239) The term “grounding” needs however some elaboration. This condition could also be called “heteronymous determined”. The organism is exclusively triggered by endogenous or exogenous factors. Being hungry for instance drives to look for food and eat. It cannot prefer not to eat. One could argue that some animals like squirrels are stocking up for the winter but this too is a condition which can not be chosen neither neglected. There is no decision taking in play. The qualification free will is not appropriate because not existing at all. As such the organism is embedded and driven blindly by conditions or it is fully grounded.

Evidently the opposite condition is being ungrounded, being able to make choices. But expressing it this way implies a caveat. It is a striking illustration of the Western tendency of thinking in terms of dualities: or this or that but not both. In that sense it comes down to being heteronymous determined or making decision and choices in an autonomous way. It seems as if there must have been a tipping point. This is however not the case. The behaviour of humans too is to a considerable degree determined in an heteronymous way. Humans are taken and driven by hunger too but in the end they are able to make a choice: eating, postponing or even refusing to look for food. So on top of the basic condition in some cases it is possible to make a choice.

then was experienced as one becomes divided, expressing distinction and distance. In the previous period the *usefulness* of the implement taken in and becoming one with the hand was the only criterion driving to make use of the implement. Usefulness remains the bottom line drive - why should an implement being recruit otherwise - but the attention for the characteristics of the form gains ever more relevance and becomes a criterion in its own right. The characteristics remain functions of the use but transcend the status of purely embodied affordances. One cannot but speculate that this is most probably a long term development even repeatedly disappeared in forgetfulness to reappear later in a different location. Once this organizing perceptive template is in place it does not focus on and select one single configuration of apt characteristics. It becomes like an overall filtering template perceiving the scene in terms of these characteristics. In that perspective different candidates seem to appear. Think of an affordant nodule on the bank of the river. It does not present itself in isolation as if it was the only affordant nodule in the world but it is one amongst several similar nodules more or less or equally affordant in relation to the formal criterion.

The term object³⁴ may be premature at this point but if used then it could be said that different units profile themselves and confront the agent driving him into a choice. Again it should not be understood in the sense of a mental capacity of being able to make choices³⁵ but as a condition teasing the agent to try out, evaluate in a sense, and make a choice in a rather natural way.

Caution once again, this explanation is not to be taken teleological i.e. 'this' took place so that the result could be (...) ³⁶ but the archaeological findings of hand axes are such that something like this must have been the case. Being emerged in an event could not have provided the suitable environment for operations to bring forth an artefact like an Acheul hand axe. Being able to distinguish sharply is a necessary prerequisite.



³⁴ From the Latin "obiectum" i.e. things put before (the senses)

³⁵ Think of a chimpanzee finding different fruits within reach. Picking one is not based on some mental evaluation but on low level parameters such as the attractiveness or of what is most close, even tilting into the inclination to grasp as many as the hands can manage. There is a tipping point in being driven rather blindly by the needs or seduction and of making an intuitive choice.

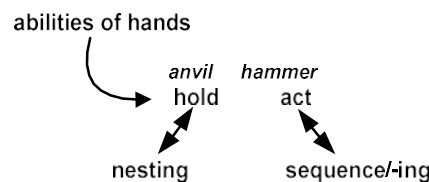
³⁶ In the sense Ralph Holloway did when dealing with language. He suggests that language had to emerge because the social organization became thus complex that it was needed. (Holloway, 1969)

The transition of the condition called centric into a perceived set of distinguishable and graspable units is of pivotal importance for the further development.

The effect on the basic logic

In the perception of the cat the prey is part of its centric existence (Plessner, 1975: chapter 7), a non-duality (Simms, 2008:2)³⁷. The characteristics radiating of the human tools expose a very different setting: clearly delineated units prone for manipulation. This being prone implies a stance of consideration, of observation and evaluation from a distance.

Recall the basic scheme



..the units related to the act of holding and of acting become seen discerned from one another.

Once again this is referring to a transition spread over an extremely large window of time.

What does that being able to discriminate mean for the negotiation of the Umwelt? In pondering on this one has to be aware of the seducing tendency to explain why it all happened. The Western culture is pre-programmed to look for causes. But that is not the point here. The attention should be directed onto the obvious fact that it happened as testified by the form of the artefacts founds and, on what these expose as possibilities until then not available. In short **the focus is on the characteristics of the changes**, on the functions and the effects of it.

The transition from being bound blindly completely to the ability to make a choice

What clearly changed and probably is of utmost importance is that the hominin in question **no longer** seems to be **bound blindly** to the situation at hand, the behavioural response dictated by genetics and or instinct. This is once again not an assumption out of the blue but is getting testified by the tools unearthed. They could not have been produced within a condition of being bound.

As mentioned earlier under note 31 the concept of that condition too deserves some clarification. I am aware of the fact that I may repeat myself but these concepts and tacit understandings are so pervasive

³⁷ Plessner offers a striking description. Also Piaget (1929) mentions this condition referring to a protoplasmic consciousness but I do not prefer this because of the suggested relation to consciousness which to me is not appropriate in the phase yet. On the development of learning to see/interpret the environment in a meaningful way, Kellman in Gelman et al. (1996)

and resistant that a constant alertness is justified. As Westerners we are not only trying to understand situations strictly in terms of cause and effect but also in terms of dualities. In that sense being bound seems to be positioned against being free as complement, being able to choose between alternatives. But in what is the case here genetics and learning processes do not disappear when a new situation emerges. They remain influential and so the new situation is not a complement annihilating the previous factors but an extra possibility.

This possibility is not a mysterious faculty appearing out of the nowhere. It is a plain and simple effect of – as suggested the very slow - introduction of delineating the formal characteristics going with a growing proficiency in manipulating implements supporting action. In that transition the perspective of looking at something as if it was placed at a distance, becoming detached or divorced of that centric experienced condition, dawns. Again all this is not coming as a bolt of lightning but is getting produced by tentative experimentation of the exploring hands. The ability of making a choice between alternatives which might come to us as a radical tilting point is therefore not a mysterious condition coming out of nowhere but is brought forth by the accidental ability of experimentation going hand in hand with the changing perspective of distinguishing different forms apparently perceived at a distance (scheme 'developmental field'). The agent is not all the sudden presented with a mysterious faculty; he is making use of faculties already present.

Most probably the conditions of the niche changed driving groups of hominin into bipedalism as a consequence in turn liberating the fore limbs of the burden of locomotion at the same time reorienting the perspective on the environment.³⁸ This might have resulted into the progressive discrimination of what fitted the hand in the light of some action to be performed, a discrimination of which a stance of growing distance taking was part of. However plausible this might come, it is of course no more than speculation. As said what counts are the observable signs demonstrating new characteristics going with changed ways of handling, seeing and appreciating.

Being able to **discern different entities** in contrast to the experience of collapsing with the event of the moment exposes room to try out. It is not an opening to try out in a non-committal way, it is a condition of affordance. Like a cup invites to receive hence the term recipient, the condition invites even pulls the agent into the act of exploring what is at hand. Take the Acheul handaxe³⁹; it is not a natural force-fed necessity. It cannot be anything else than the product of trying out and making choices from out a perspective of tangible evaluation. The label 'consideration' is at this point all too strong referring to a mental inclination. It has to be seen on the level of the tangible. It is all about actions in line with what hands able to grasp allow. That does not suggest an unlimited freedom appearing out of the blue as a mysterious ability. It comes down to possibilities confined by what hands can do.

³⁸ Think of penicillin. No one intentionally invented it. The conditions were right and the human researcher forgot to put some tray with a culture in a safe place. The conditions and the human action resulted in a not intended but useful result. Discussed in this text has nothing to do with inventions of medicine but what I want to make clear is the occurrence of useful effects from out quite simple changing circumstances.

³⁹ Agreed this is sophisticated form produced long time after the initial steps onto that path of development, but it has been chosen as illustration because its degree of sophistication and standardization offers a clear demonstration of what is meant.

A glimpse on the ability of freedom is a risky suggestion because it tacitly becomes understood in an absolute sense. This probably is a heritage of Plato's ideals, instances with a type of esoteric qualities, heavenly, idle and endless. In that sense "freedom" is shrouded in esoteric veils. But on closer inspection any type of freedom does come down in finding a set of possibilities until then not existent within reach. In this case it builds on existing abilities such different types of action distributed over the two hands, the particular distribution of tasks and the particular orderings consecutive actions are executed. It will be obvious that being able to discern distinct configurations – I hesitate to use the term "objects" already - will lift the structure of holding something(s) to a new level. Remind that the terms distinct and distance are related to the Latin "distare", meaning standing apart.

The minimal program as a relevant approach

However this contribution is not about language the following quote (12) might be of some service:

- a) "Faculty of Language Broad (FLB) includes a sensory-motor system, a conceptual-intentional system, and the computational mechanisms for recursion, providing the capacity to generate an infinite range of expressions from a finite set of elements."
- b) "We hypothesize that Faculty of Language Narrow only includes recursion and is the only uniquely human component of the faculty of language." and
- c) "We further argue that FLN may have evolved for reasons other than language"⁴⁰

What is the meaning of this?

In first instance the authors relate the faculty of language to a sensory-motor and a conceptual system, which is a perspective very similar to what is defended in this paper.⁴¹ Pointing out recursion as the only human component is prone for discussion. On the one hand by considering it as such the exceptional importance of it is becoming stressed. But on the other hand I think recursion can in its primary form be observed in the act of holding an implement, it is actually mirroring a motor action.⁴²

The point to be made is that spite of the fact that recursion can be observed in apes handling tools, the human being able to discern discrete units to hold and combine the one into the other is lifting this act to a level opening different possibilities. In the embedded situation in the case of the apes there was no choice in the sense mentioned earlier. The action of the ape comes down to an all encompassing gesture while in the new situation observed from a distance, different entities are ready to grab and chosen from. The blind pressure to make a particular choice is left behind. This is a new condition, a tentative stance of consideration allowing one unit to be used to adapt another resulting in an Acheul type handaxe for instance. Apes do use hammer-stones picked up on the basis of intuitive affordances, but they never tailor the implements chosen.

⁴⁰ Hauser, Chomsky & Fitch. 2002. The faculty of language: what is it, who has it and how did it evolve? Science.

⁴¹ Taking the history of Chomsky's models into consideration, this is a quite remarkable point of view.

⁴² For that reason the observation that the Pirahã people do not apply recursion is flawed. The linguistic expressions are embedded in the very act of bringing them forth indeed.

Freedom of choice embedded in operations

The condition in which the hominin collapses with the circumstances of the environment into one single world experience, which Plessner would call centric, transferred partially into a perspective onto the environment composed of manipulable discrete units.

This new condition is not to be understood as an opportunity emerging from a new mental condition the latter to be taken something existing on its own. Take for instance 'being kind'. That comes down to a series of personal interventions which through repetition in the end becomes appreciated as a quality called 'kindness' as if this would be something existing in its own right. In the case relevant here the reorganization of the focus in concert with the out reaching hands results in a demarcation of manipulable units bringing forth affordant entities. As the product of a filter redefining all what is perceived, the scene is presented as a set of units from which one can be chosen above the other on the basis of trying out. This is not only a matter of motor manipulation but involves also a weighing what fits best, an act of appreciation or evaluation. Being biased to analyze everything that happens we are inclined to divide acts of this kind into different aspect even substantive dimensions. In a direct confrontation however both, motor and evaluation, are one movement. Most important this is a quite common even trivial form of action not involving purely mental capacities.⁴³ The point is that all this fits mundane settings; there are no mysteries involved.

From being to having

The new perceptive cognitive perspective going with a different way of handling elements, results in a technical proficiency in turn reinforcing the development of the perspective mentioned. It is another mode of being in the world by which the hominin starts to distinguish itself from the species most akin. Manipulation of instruments changed the perspective from *being* a world into *having* one. With the actual complexity of the human into account, it would not surprise that the content of this suggestion would be judged as being all too simple. Agreed, the picture human behaviour and capabilities demonstrates is quite intricate. But all things considered the character of this type of intricacy has a lot in common with the impression offered by fractals: in principle quite simple but after endless application this simplicity is getting out of sight only leaving a confrontation with a very complex depiction.⁴⁴

The type of the interventions described is on the same level as the basic skill needed for cycling, coming down to two fundamental abilities: finding and holding balance and moving forward. The similarity is striking. Obtaining balance goes hand in hand with moving forward, the one cannot without the other. For the subject discussed in this contribution there are also two components: configuring input into a clearly distinguishable unit requiring a perspective of distance, phrased in terms of mental abilities a stance of consideration. Here too the one cannot be thought without the other. And strikingly both cycling and objectification are mainly perceptive-cognitive and motor adaptations in a changing environmental setting. In the first case from bipedal to rolling as mode of locomotion and from locomotion on all fours to

⁴³ Morgan's canon or Occam's razor are appropriate here "one has not to assume more mind than necessary", if it can be done without...

⁴⁴ Hurford gives the example of playing the piano (2014:74). Reduced to its elementary level it is indeed extremely simple, despite that it can result into extraordinary results, a matter small variations and technical skills.

an erect bipedal position in the second, both instances against the same material circumstances, a change in the environment⁴⁵. So this comparison is not all that bad.

Concerning the argument of simplicity, what to think of Boolean algebra based on the values true and false and the operations “and” and “or”? This in itself is extremely uncomplicated going back on two extremely simple conditions: switch on or switch off. It however offers the blueprint and the steppingstone onto the realm of computation, computers, internet...

Disposing of a clearly delineated unit which can be distinguished from other equally clearly delineated entities is the necessary condition. That is exactly what is shown in the tools such as the Acheul handaxe.

Whatever caused the coming into being of this characteristic the fact that it is only observable in the development of a particular line (group or branch) of hominin signifies the turning point, the onset into a particular direction of the development.

Time to resume

- On the most fundamental level meaning is given, it is so to speak identical to being alive itself.
- The particular characteristics of the body organize the way the meaning given can be brought to an end.
- In that respect for the hominin the hands play the key role.
- In other words, they specify the way the burdens posed by the environment are going to be negotiated.
- The abilities provided are initially the same as these of the great apes, however some recruit implements (chimpanzees) others do not or rarely (gorillas).
- In so far tools are used the strategies are similar: holding, hammering, poking, digging...
- Artefacts found in large numbers testify that at a particular moment in evolution a branch of the hominin tailored the stone tools in a way (repeated and sophisticated) not observed in other species.
- Strikingly the items unearthed were clearly delineated, perceivable as **isolated individual units** in contrast to the Gestalt-type figure with diffuse borders and dynamic character.
- The type of interventions needed to produce that effect, well-targeted and repetitive, reveals a stance of **distance taking**, consideration and evaluation.⁴⁶
- This stance has not to be understood as a substantial ability or competence, a prerequisite without which the effects could not have been produced but, as a dimension of a particular way of approaching a situation at hand (the latter literally as well as metaphorically).
- The condition of event and organism *being* collapsed into one experience (centric) must have been transformed into a condition of an organism *having* a scene composed of manipulable entities perceived over there – at a distance. Having left behind the centric condition signifies the pivotal instance.

⁴⁵ Corballis (1991) observes that apparently around 8.000.000 years ago a hominin walked into the tunnel on all fours while 4.000.000 a bipedal species appeared. This period is sometimes called the pleiocene gap.

⁴⁶ The following is a remark in the margin. This coming into being of an emerging perspective in which a stance of what could be called ‘distance taking’ is in order signifies probably the condition of being which much later would be called “Dasein” (Heidegger) or “pour-soi” (Sartre). The being of the cow adopts the mode of grazing. The grazing is characterizing how the cow is as being. The perspective characterized by distance (seemingly looking and judging from a distance) is the mode the being of the hominin which in the end will become human takes. In that sense being (Sein) is not opposed to being there (Dasein) meaning not forming a unity with the event at hand, but is the mode the being takes and which differs from the mode previously expressed.

- The units mentioned express particular characteristics. They can be preserved, transported, manipulated and clearly discerned from other units filtered out by the same perception organizing pattern. Being clearly discernable is the first prerequisite provoking further development. The characteristics are inherent, not forcing into manipulation but being affordant inviting to that end. Diffuse Gestalt-figures on the other hand promote engagement but manipulation is of a different order.

- As the condition of being collapsed into oneness is called centric, the new condition lifting this being bound rather blindly could consequently be called off-centred or excentric.⁴⁷

- Already existing strategies such as the distribution of functions over both hands and the (particular) sequencing of actions can of course be continued but – most importantly – also find new opportunities in the perception of discrete entities defined by and affordant to the abilities of the hands.

- Making use of several discrete units is naturally implied in the changed relation to the environment. Increasing the reach of holding one item into the hand to the extension of posing one item into another and this distributed over several units is in that changed perspective neither problematic.

=> The resulting condition is that of a hominin characterized by a changed or reorganized perspective on the environment going hand in hand with an extended set of manipulations taking advantage of tools modified to improve effectiveness.⁴⁸

This stage could be called “the technical proficient hominin or following Leaky’s wordings even ape”.

It needs to be stressed that in this development nothing mysterious is going on. And if there is something deserving that label then it is about the circumstances underlying the changes mentioned – but by this entering the field of causes which is another story altogether. As repeatedly said the focus here is on what has changed, what are the characteristics, the opportunities becoming within reach and what are the fruits?

In the light of the development into humanization the conditions described are necessary ones. Without these there would not have been a development in the direction we are familiar with. They are the stepping stones, the affordances or the conditions of readiness for developments.

Being the necessary conditions they are however not sufficient for one of the most central characterizations of man: the ability to share declarative information or in its broadest form the transmission of culture.

The claim put forward is that self initiated experience of displacement in space and time offers the sufficient steppingstone. How can this be explained?

⁴⁷ Sometimes also called allocentric, defined as the ability to imagine visual perspectives not centred on ego. (Wynn & Coolidge; 2016:2005) Observe that to my opinion the authors might be conflating two different conditions: a perceptive cognitive perspective reorganization and displacement. Allocentric in philosophical terms may be referred to as Archimedes position when tilting the globe. McWhinney opposes grounded to ungrounded (in Givon & Mall, 2002:239)

⁴⁸ The goal is broad. Showing off for instance can also be understood as a valid goal.

Levels of meaning

This is the right moment to take a different path.

In the Western tradition meaning seems to be something in the open which has to be acquired. As has been made clear earlier the idea defended here is that being alive is synonymous with meaning. The meaningful figure is obtaining its phenomenal form on the edge of the chaos present on the one hand selected out by the primary motives and the abilities the bodily infrastructure the organism provides on the other. In that sense the world as meaningful appearance will be different for the ant compared to the one of the hominin.

Life equals meaning. A living organism is full of meaning from the very first moment.

Two levels have to be pointed out. In **the first** instance meaning is what is relevant in relation to the primary motives, the latter coming down to sustaining life and procreation.

The second level is intertwined with this. It is determined by the type and construction of the body. The cow is as any other organism motivated to stay alive. But the way it is getting around is determined by the construction of the body, its orientation and the abilities opened by the particular and species defined body plan. Man is no exception. Remarkable detail: however the hominin is akin to other ape species there are signs that the former started walking on the hind limbs around four million years ago (Kanapoi region, Laetoli, mentioned in Stoczkowski, 2002:75). This changed the perspective on the surroundings quite drastically. Not less important it freed the hands from the burden of supporting locomotion, hands which already were skilled in grasping and holding. They provide and organize in a prototypal way access to what was of importance in the environment. In that sense the motive determining the drive onto the world got specified by the abilities of the hand. Not all what in principle could satisfy hunger for instance appealed, but what the hands could grasp.

So the primary motives provide the **first** layer of meaning. The hands provide the second in that they refine the first by their selective function. This **second** layer is easily overlooked, disappearing unnoticed in obscurity. This is remarkable because in finding out what something unknown is we Westerners normally look at what it can do or what it can be used for. Not so in the case of the human. Blinded by the Greek heritage we focus on its essence⁴⁹. If man would have been approached as a thing unknown, then the hands would certainly stand out firing up understanding.

In line with the most fundamental drive and with the embodiment abilities of the hands the tool supporting action appears as the **third** layer of meaning. The tool had initially a dedicated task consequently meaning. Not in the sense of a tool as a general category referring to any implement supporting action, but for instance as a particular scraper, not the general category of scrapers, let alone tools.

The fourth layer: meaning by association

Accidentally the scraper could have been involved in another event of importance, killing an enemy for instance. The presence and moreover the presentation of it on another moment and in another location could have sparked a condition of reminiscence in the actor and others having witnessed that event. Based on association the tool in question acquired a semantic payload. This instantiates the **fourth** layer of

⁴⁹ "Ti esti ti" or what is that – that what is (referring to the unchangeable essence, the nature of it).

meaning.⁵⁰ In itself a meaningful experience provoked by association is not extraordinary. An animal of prey picking up the smell of a predator or hearing the sound produced by one will also be fired up as if the threat was actually present.

So experiencing an imaginative content coming down to reviving a situation not actually present is not exceptional. What in the case of the hominin becoming human is exceptional then?

At this point the previous part of this contribution becomes relevant.

On the status of the object

The technical proficient hominin is characterized by reorganization of perceptive cognitive ordering focusing on clearly distinct – i.e. separate and on a distance - entities forcing the agent into a choice. Remember that this is not to be taken as an installed mental capacity but as a tangible presence provoking motor action in relation to the preferences of the need of the moment.

So there are clearly distinguishable units going with a condition eliciting to make a choice⁵¹. Within the confinements of being grounded, bound to situations answered intuitively by existing heuristics and behavioural programs gradually the mentioned approach arose. A new way of negotiating the burdens of the environment got in place.

It is not superfluous to stress that the reorganization of the ordering giving perceptual pattern whatever the causes driving into that direction, is at the core of the new abilities. Without that pattern which today would be recognized and conceptualized as “object”, the advances would not have been possible.

Before listing up some of the new characteristics and abilities, the following observation should be made. Apart from some philosophers “object” is rarely considered to be based on an underlying pattern or a concept.⁵² It is tacitly taken as self evident even a natural type. The world is full of objects. It is the way it is, end of story⁵³. However studies on the behaviour of animals⁵⁴, research in the domain of developmental psychology⁵⁵ and some cases of treatment of congenital blind⁵⁶, all provide strong indications that the object or more precisely the concept of object is a cognitive construct. The human has to learn to recognize⁵⁷ a particular configuration as something belonging to the category “object”, further to identify

⁵⁰ There (at least) two more layers. The fifth is meaning by stipulation, a layer coming into being once the opportunities of displacement are fully explored and exploited. The sixth layer builds further on this by applying the methods of projection. It could be argued that stipulation is based on projection and so this distinction should not be made. This is open for discussion but not really of importance as these layers are however not relevant for this exposition.

⁵¹ I am quite reluctant using the term “free” because it all too easy suggests a mental capacity – think of free willness as some quality existing in its own right. Again what is meant here if really low level: something being present, preference and motor ability.

⁵² In The Stanford Encyclopaedia of Philosophy, the discussion on the meaning of object takes 60 pages. This might well be an indication that is not evident and probably somewhat problematic to say the least.

⁵³ Take “Visual Object Recognition” by Grauman & Leibe (2011). Even a basic handbook like this seems to take objects as kinds given, the problem is the process of recognition.

⁵⁴ Mammals and hominidae in particular.

⁵⁵ Lockman (2000); Casler (2005); Simms (2008) to name a few contributions in this domain.

⁵⁶ Mike May for instance discussed by Huber et al. (2015)

⁵⁷ “To rephrase” so to speak the world imposed and molded under the pressure of the urging primary motivations into a different form also relevant but from a different approach.

it as a particular type within that category. So the position defended here is not that exceptional. Alas taking the object as a natural given, the difference opening the insight made in this paper vanishes. The tacit assumption being that if there is no difference in that dimension between man and non-human animal, the germs underlying the human trajectory must be looked for in other directions. In combination with the assumption of taking seriously the existence of mental capacities⁵⁸ on the one hand and the mysterious fruits of the neural workings on the other, the deception is complete: the human particularity emerges from the workings of the brain as a Genie from Aladdin's wonder lamp. While if the difference is taken seriously a range of characteristics until then not understood gains transparency.

It needs to be simple and elegant but not in all cases

This requires however that the building blocks in all their simplicity have to be taken serious. This is not said without good reason because the attitude of mainstream thinking is somewhat peculiar. In the natural sciences, the more simple an idea or a formula is, the greater the admiration. It is proclaimed as most elegant. Conversely when the subject has to do with the humanities, eyebrows are getting frowned accompanied by some mumbling that it is all so complicated, billions of neuronal connections taken as prime example. Boolean algebra as apex of simplicity at the same time the bottom line of all computing has been given⁵⁹. It falls back on two states: true and false or in mechanical sense on and off and a few operators such as "and" or "or". Think on the other hand of the highly complicated graphic scenes and computational capacities based on intermediate increasingly more complex computer languages. Philosophers might prefer another case as illustration. Take the introduction of the condition of immutability in the vicinity of the Aegean Sea around the 5th century BCE. It is about one uncomplicated concept⁶⁰ defining the course of the Western thinking in the meantime a dominant model around the world. This origin however has long been lost out of sight.

This point made, let us focus on characteristics, features and abilities going with or opened by the introduction of the "object" template.

The changed relation, characteristics and abilities

The most significant change occurred in the relation to the environment. Being absorbed in and by an event, a centric experience in Plessner's terminology, made room for a relation to something in front of the agent, a relation of *con-front*-ation. That some-thing we call an object sounds more striking in German "die Gegenstände"⁶¹. It expresses two aspects: first there is some-thing distinct and second it is situated over there at some distance. "Distare" as root for both meanings has been mentioned earlier. Both are exactly

⁵⁸ Goethe observes "Denn eben wo Begriffe fehlen Da stellt ein wort zur rechten zeit sich ein". But once word became commonplace the quest for the corresponding entity is fired up. In that sense the search for the seat of consciousness is in full swing. One suggestion by a highly esteemed mathematician is that it might be emerging from the workings of still to find quantum gravitation fields in micro tubules. Hmmm.

⁵⁹ Quantum computers left out of scope here.

⁶⁰ Reference made to the transition of "hoti estin" (that it is) to "ti estin" (what is the nature of that what is?)

⁶¹ Reference also made to Hegel taking "fur-sich" as the object finding itself in front of the subject or take the distinction between "pour-soi" and "en-soi" made by Sartre.

the characteristics of the template acquiring form in the explorative relation to the action supporting implement. It is important to remind that this explorative relation carries the germs of a condition which eventually will open the space to make a choice in first instance on the level of action, a condition which once projected onto more abstract contents will be referred to as being free⁶². It is at the same time condition, action and perspective. The naming only expresses a difference in the perspective when discussing this subject. It is the hallmark of a crucial difference in comparison to the species most akin. Their behaviour is cued⁶³ either by the pressure of their needs or by events occurring in the environment. That is the **basic condition**.

But improving the tools also testifies of the inclination of taking initiative. This is akin to being able to make a choice on the level of manipulation. The latter needs to be stressed: the openness originates first and actually only manifestly on the level of manipulation or action if taken somewhat broader. This level will provide the substrate for the much praised mental openness characterizing creativity and generativity taken as the hallmark of the human. This so called mental openness is realized through a mechanism of projection.⁶⁴ I have to limit myself here to only mentioning this dimension or realm of importance because it not only deserves a discussion in its own right, it would lead beyond the scope of this text.

Making a choice between in that particular case nodules, expresses a gesture of initiative. It is not something sprouting from out a mental capacity being present somewhere in the psyche. It is elicited by the context demanding action in the context of acquiring an implement in order to support further action. At this point the hominin in question testifies of being able to **initiate** action **himself** instead of being heteronymous cued into it. This is a crucial moment of transition.

There is still more. The implement not only gained a distinct shape, in the fourth layer of acquiring meaning it also functioned as a stimulus taking the place of the authentic event. According to Vygotsky it acquired the role of a **second order stimulus**. It leads to the effect of bringing reminiscence to life implying that it expressed something about the character of the event it referred to. Again two aspects are of relevance. First it expresses a relation of **aboutness** and second it brings an informational payload to

⁶² It has again to be stressed that this type of being free meaning in the first place “unbound” occurs on the level of action. The idea of being *free* as a psychic ability only comes much later. To my knowledge that can be observed with Zoroaster when good and evil changed from real life relations into qualities and with the realm of ideas by Plato.

⁶³ It is tempting to add “(...)cued *rather blindly*”. But this would suggest that there would also be another condition “not blind by based on reflection” and this is a misleading formulation because in the condition of the non-human animal an alternative is absolutely not existing.

⁶⁴ In my research leading to the core ideas expressed in *The Forgotten Transition* it was not all that difficult to sketch out how a holophrastic way of expression based on the manipulation of elements compromised by displacement could have been coming into being. But this had little to do with the sophistication of a full blown human language. This felt like an absolute abyss for quite some time. It changed by reading work on semantics, cognitive and grammatically, in which the mechanism of projection played a central role. (Lakoff, Johnson, Kittay, Langacker, Fauconnier to mention some authors working in that field)

life. Could that not be the basic pattern of what in linguistics is called a declarative⁶⁵ statement – rather *content* in the stage discussed here – about an instance?⁶⁶

All this is based on perceiving discrete entities instead of pure Gestalt-figures. The driving dynamics described by Gestalt-psychology are still present but the forms taking the foreground are functions of the dynamics of manipulation serving the driving dynamics mentioned.

These forms, these objects can be conserved, transported⁶⁷ and manipulated. The latter has a special effect. Been compromised with an extra layer of meaning acquired by association, the manipulation of the implement implies the manipulation of the experience provoked, an experience characterized by a nature of displacement. In that sense **the “logic” of manipulation is transposed onto and mirrored in the structure of the joined chunks of displacement.**

In a nutshell figures start to show ever more bordered, becoming discrete and distinct from one another. Taken over by self initiated actions being heteronymous determined by the conditions of the moment fades away. These entities allow firing up reminiscences. They function as carriers of displacement. The structure in manipulating these carriers is mirrored in the structure of complex reminiscences. It takes over the perspective of distance and of declaring about.

Conclusion, the twofold aim of this essay.

In first instance I wanted to do right to the role of the hands in negotiating the environment. Being first line their form and way of instantiating action sketches out the blueprint for further heuristics and operational steps. As such they are paving the evolutionary trajectory leading into what will characterize the human being in distinction to non human animals. However there are publications shedding light on the importance of the hands, the primordial and decisive influence is never fully stressed. To put it bluntly the type of knowledge and action characterizing the human is permeated by the scheme of mediated manipulation⁶⁸. And that in turn comes down the presence, the form and the motor abilities of the hands. Converse without hands all this would not be possible, let alone thinkable making use of wording.

The decisive role of the hands deserves to be fully appreciated.

⁶⁵ “The bulk of the grammatical machinery of human language is invested in the coding of declarative speech-acts”. (Givón, 2001:32)

And Tomasello (1999:36, see also 2003) observes that supplying data about the repertoire of chimpanzees showing that their “signals” are restricted to the drawing of attention and to imperative gestures. He adds that in their natural habitat they never initiate the intention to give information about something (declarative).

⁶⁶ In this context two terms come to mind. Think of Charles Sanders Peirce defining a sign as something – some *thing* – standing for something else and Ernst Cassirer in turn defining a symbol as a sign enrobed in meaning.

⁶⁷ In some production sites a massive amount of hand axes were found providing indications these were intended to be used elsewhere.

⁶⁸ Descartes and many others for that matter predetermined by the model in which God provided man with the capacity of ratio would not agree. Even Jerry Fodor (1975) suggested that mentalese preceded the form of language which could be captured by the senses. But how could language without word like elements could be realized? Are words then not things following the dynamics of manipulation which mirror these of the hands in the manipulation of tools?

In second instance but not less important the spotlight got focused on the role of displacement and on the not mysterious way the dynamics and the effects of it can be thought. Able to manipulate on a self initiated basis manipulation of objects as carriers of reminiscence allow firing up imaginative realms. This enlarges the world within sensible reach in an exponential way. This ability is without any doubt a cornerstone of the typical human culture.

Not really a goal but through this exposition six layers of giving meaning were mentioned.

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2. Hands

This text is an extract of an essay “Hand and imagination, manipulation of the basic dynamic underlying displacement”. It is dedicated to the memory of Marc De Vos, a friend deeply interested the human existence.

All homininea have and make use of hands that are able to grasp, hold and move whatever could be grasped, held and moved. Humans are hand centred in space⁶⁹. The latter is not to be understood in a Euclidean⁷⁰ or Newtonian sense but sensory and motor defined. In Euclidean sense space is a novelty only existing in the thinking brought forth by the human kind. Space on the level of experience shared with species most akin comes down to the extent the eye can catch, the reach of locomotion and of the grasping hand. So space is more a dimension of perception and of movement rather than an imaginative framework onto which orienting parameters can be set out.

The fact being equipped with hands is so trivial that it is overlooked altogether. However the importance of the logic of the hands cannot be appreciated enough. It could not have occurred in animals with hooves, wings or without limbs altogether.

The human way of negotiating the world does not come out of the blue, it is not neutral nor independent and objective. It is harnessed by the particularities of the body. The hands provide the interface where the negotiation of the environment takes place⁷¹. It sets and specifies the blueprint of the development at least of motor directedness, perceptual focus and cognitive patterns and strategies. In short, the importance of the type of embodiment is paramount.⁷²

It could be noticed that the position and contribution has been observed but apart of the fact that the hands fulfil a central role in the existence of the human, is it well worth all the fuzz?

This misses the point completely.

⁶⁹ Cfr. N.P. Holmes in Z. Radman, 2013:57-70

⁷⁰ Wynn & Coolidge, 2016 are premature in relating spatial cognition to Euclidean spatial thinking. Because that type of understanding is only possible much later when the use of implements as secondary stimuli provoking displacement and thus projection got introduced. Silverman (1992, 2000) suggested that an Euclidean framed awareness could be based in the division of labour of hunter gatherers.

⁷¹ In its own context not to be confused with what is explained here. Following Anaxagoras Aristotle considered the hand the tool of tools. But he also considered the hand as the product of the intellect and not the intellect brought forth by the possession of hands (De Anima, 432a).

⁷² The following contrasting situation illustrates the importance. For a grazer the head is directed to the ground, the lips pulling the grass, the eyes directed sideways alert for eventual dangers. The world experienced is a conglomerate of ground directedness, grass and caution. Something similar is the case for the hominin being bipedal and provided with hands to grasp but directed in a very different sense.

Further the following are of relevance in relation to the hand as channel of approaching the world: Radman Z. (ed), 2013, The hand an organ of the mind; Napier, J. 1962, The evolution of the hand, The Scientific American; Cagli & Coraggio, 2008, What the draughtsman's hand tells the draughtsman's eye, International Journal of Pattern Recognition and Artificial Intelligence; Tocheri et al.2008, The evolutionary history of the hominin hand (...), Journal Anatomy; Marzke M.W., 1992, Evolutionary development of the human thumb, Hand Clinics; Alméjija & Sherwood, 2017, Hands, brains and precision grips, Researchgate.

Being the actual first line interface the hand centred orientation is far reaching. It implies that all interventions onto the world are framed within the logic of the abilities of the hands in cooperation⁷³. This easily escapes us because it is our very nature, the way we approach the environment. It is like the body of water for the fish. Before being characterized as “speaking”, for anything humans are manipulating beings. The following could help. What do all living creatures have in common? Being primary motivated, i.e. maintaining life and procreation. Several groups of species however differ in the way that motivation is getting realized. They differ in the way the burdens laid upon by the particular environmental conditions are negotiated. A bird has wings and a beak. It moves by flying and feeds by using the beak⁷⁴. That is the systematic underlying its existence. That logic to use an inappropriate word is different for different types such as a predator like in the case of a tiger, a grazer like an antelope, the crocodile, the snake etc. What is that basic pattern underlying negotiating the environment for the creature which in the end will be called human? For the species most akin the hands have a twofold function. Chimps are knuckle walkers so hands are used to move around. But they are also used to hold on the branches of trees, grasp fruit or a prey, hold the offspring, in some cases even handle an action supporting implement. For what would become the human line the function of locomotion has been divorced of the function of holding and grasping. Locomotion brings where the food is, the hands specialize in handling it. This might be an all too simple illustration but it comes down to the fact that main functions such as locomotion and manipulation are getting divorced and that being the case they specialize along their track. Upright walking can be considered a specialization, the same goes for the applications of the hands. They specialize in executing interventions. In summery, they are the first line specialists in the act of negotiation. But that has a major consequence. It actually means that all further refinements, heuristics and strategies originate within that framework and cannot do anything else then follow the “logic” of it.⁷⁵

The suggestion is that in the further development two stages can be discerned. In first instance the taking form of a perceptive configuration which will adapt to and fit the act of manipulation and secondly the use of the form given artefact as a stimulus of second order thus provoking displacements in time and space in the experience.

On closer inspection and way ahead of what has to come, how difficult is it to recognize in the act of speaking the manipulation of objects with the purpose of provoking a certain effect? Is it too bold to state that this is an example of negotiation?

At the risk of repeating myself this pattern is so low level or first line that it goes unnoticed, moreover veiled by a historical heritage that it is all about the ultimate truth far away from the realm of vulgar manipulations.

⁷³ The trajectory of the human evolution is brought forth by the use of hands; it does not as a ghost out of Allahadin's lamp emerge from the workings of the neural tissue. Compare with Trivers observing that the brain is functional in surviving not in the task of producing knowledge (2002).

⁷⁴ It is more then often said that man is special. But what to think of birds able to fly? Isn't that not even more surprising?

⁷⁵ The automobile whatever the actual degree of sophistication could only be developed within the logic of the abilities provided by the introduction of the wheel.

In short whatever the semantic discourse the human enrobes his existence in, his way of behaving, his way of being in the world can from a technical point of view be understood as a form of mediated manipulation, the logic of the hands providing the overall framework.⁷⁶

⁷⁶ Let us burry the picture of the human provided with special seemingly esoteric “mental” gifts and try to understand behaviour as a particular motor based way of negotiating the world.

3. On “the object”

The psychological study of perception brings to light that in the visual mode a condition of alertness is raised by movement in the visual field. This coincides with the fact that neural tissue only is present in moving organisms. The tube sea squirt (*Ciona intestinalis*) offers an excellent illustration. In its initial state as larvae, it has a rudimentary nerve centre. But once a suitable spot to stay found, it digests this neural knot. This makes the specific function of a brain clear, all be it in this case a very simple specimen⁷⁷.

Movement as a discriminating factor is very powerful. Large objects or even living creatures as far as they stay immobile do in most cases not get noticed, a phenomenon well known to hunters and wildlife spotters. Under these circumstances any moving item will acquire foreground value whereas stationary configurations vanish into the diffuse background⁷⁸.

The perception of an item with object characteristics⁷⁹ is different compared to that of an event. An object as a clear delimited entity acquires a certain degree of salience. It takes position in the focus of attention. At this instance the cognitive scheme in the act of organizing a concept, puts together parts into a certain form and so plays the determining role instead of the movement in the case of events. The object is “there”, standing tall, detached from but still present in the context. It is present in front of the observer in a very special way. The observer seems to be able to move around it with all the other stuff being present rather diffuse in the background. As manipulator he seems to be able to topple the object in all directions. With all this in one and the same act, geometric three-dimensionality gets introduced as an alternative for the force field in

⁷⁷ Trivers (2002) pointing out that natural and sexual selection is not aimed at realizing a brain capable of true (corresponding) knowledge, has been referred to earlier. He stresses that the only biological function of the brain is to sustain the fitness of the organism in order to be able to successfully transfer its genes. Also Vaihinger expresses a similar point of view.

⁷⁸ Rensink (2000) mentions the limited character of the visual focus and at the same time to different forms of blindness of which his comments, that they are common rather than exceptional.

⁷⁹ The following gives an idea of how an object is getting thought of. Nisbett in comparing Eastern and Western thought observes the following remarkable position sounding familiar but referring to the history of thought and not to the introduction of a stable configuration of input in the frame or anthropogenesis “(...) more basic to Greek philosophy is its background scheme, which regarded the object in isolation as the proper focus of attention and analysis.” (2003:10)

Jumping to more recent times John Stuart Mill in his psychological theory of belief in externality takes an object as a permanent possibility of sensation – what I would call a stable configuration. For Berkeley knowledge of material objects is ideal (an idea as a product of the mind) not real.

For Kant an object is any thing which is conditioned – which is brought into condition thus – by the subjects representation and so capable of being known. As the thing in itself cannot be known it cannot take the form of an object. Categories of the mind are necessary for the experience of spatio-temporal objects.

A contemporary researcher in the field of perception Ian E. Gordon concludes “(...) in characterizing a real object as a stimulus we do not refer to an absolute property, in and by itself but only to the objects relationships to a living organism” (2004:23). It will be clear that the literature on the subject is vast. What is getting mentioned serves only as a hint.

which the organism is fully engaged. This is yet another cognitive organisational characteristic. Space unfolds itself along the lines of that geometrical dimension with the object present in a coordinational location.

The manipulated object provokes even more. In a semantic tension it calls for the other instance in the manipulation, the manipulating and experiencing subject. And a step further still, the manipulating subject taking himself to object of contemplation and manipulation⁸⁰.

In summary the characteristics of “the object” are:

- it shows itself as a distinctive entity prominent against the background; this is opposed to the figure with fuzzy borders merging into the gradually diffusing background characteristic for an event;
- in relation to the object distance and detachment is taking form in the experience of the observer-actor as opposed to the character of structured coupling and the being absorbed into the event;
- with this attitude of distance taking the character of direct engagement in the event is getting transformed into an orientation of the observer-actor onto the object;
- this taking of distance implies a rupture or decoupling providing the necessary condition for the opportunity to make a choice whether or not to act, contrary to being rather blindly restrained into the direct engagement.

This is all together a very different organized perception than the one in which events play the exclusive role.

But whatever the organization of the content, any perception⁸¹ affects profoundly the relationship of the organism to the perceived context or Umwelt. This is particularly so for basic categories and concepts such as “event” and “object”.

What is of special importance is the fact that observations of “events” and “objects” do not bring to light natural items, units existing in the natural order in that particular form. An “object” as a basic categorizing scheme is a cognitive construct embedded in the reorganisation of the perception which accompanied or followed from the evolving handling of means (tools). In one

⁸⁰ A same kind of objectivation can be observed in the treatment of fire. Every organism is instinctively forced to retreat from it but the homo-erectus which apparently became capable to overcome that strong instinct and started to treat fire the same way it would treat an object: detached. Science (29.4.2004) refers to locations where indications of controlled use of fire can be found. It goes as far as 790.000 years back. The least controversial finding is situated in Amata on the French Riviera and is dated at 300.000 years. However, of importance here is that the mastering of fire followed the introduction of flint knapping and fits the same approach of decoupling and detachment. The force of the instinct seems to have been overcome in the same way the incorporation of a tool seems to have been left behind.

⁸¹ Perception meaning interpreted observations.

sentence an object is the name given to a concept which got form during a particular period in the development leading to the modern human.

But the fact that the literature only refers to “object” cannot be overlooked.

Take Schneider G.E. for instance, who in Science 163 dating from 1969, reports that descriptions allowing identification of objects are being processed in another neural location than the description guiding the hand into a grasping form fitting the object in question. Ungerleider L.G. and Mishkin M. in “Analysis of visual behaviour” (1982) provide more accurate information on the exact neural pathways involved. Here too the description “object’s qualities” is being used. Goodale M.A. and Milner A.D. in turn deepen the research of which the results become published in 1992. They maintain the same terminology. But Kravitz et al. in a publication dating from 2013 opt for a different formulation. In a separate text box discussing the general functions of both neural pathways they clarify that “The key aspect of the ventral pathway representations is not that they are tied to particular physical objects, but that they capture *a stable configuration of visual information* (e.g. texture, scenes).” (stress added)

The question arises why Schneider and the other authors apart from Kravitz et al. maintain making reference to objects? Has the research they performed indeed shown that the visual stimuli evidently point in the direction of things called objects? Or did they without questioning adopt a tacitly shared conception? The articles point into the direction of the latter possibility. For these authors objects seem to be elements present in nature.

The term “object” however belongs to the same family as “event, condition and process”. They all refer to categories by virtue of a particular feature. What precisely that feature might be in the case discussed here is made clear by Kravitz et al. “a stable configuration of visual information”.

However “object” and “event” are already comprehensive categories, what Kravitz et al. refer to goes even further, more precisely it encompasses visual input testifying of a stable configuration⁸². In other words this is about the coherence of elements constituting a figure. An event how dynamical it might be remains to be the same event in virtue of this coherence. In the same way an object remains to be the same object in spite of the different perspectives (Abschattungen) in relation to the movements of the eyes, the changing position of the head and the body. Coherence is the keyword^{83/84}.

The reason why different elements con-figure, that is make one figure, is a theme of central importance in this volume. Primary motives forge elements from the chaotic input to a relevant event. The functional reorientation of the hands after the hominid became fully bipedal

⁸² This could be called a formal basic level category in contrast to the event and the object configurations which in contrast to the former could be referred to as subordinate categories characterized by a semantic payload.

⁸³ See also Hummel, 2000.

⁸⁴ This is a very different approach than for instance Latour (1996) and Tylen and McGraw (Gallotti et al.2014, chapter 10) take. Kravitz focusses on the coming into being of the concept, while the authors mentioned elaborated on the coming into being of meaning of objects in a particular functional context.

configures the input of what will be “ready at hand” - in the sense of Gibson’s affordance or Heidegger’s *zu händenheit* - into the concept of an object.

The importance of the reformulation made by Kravitz et al. is obvious. Objects considered to pertain to the natural order and in that condition providing the very first step for further reasoning, a conception generally shared, exclude the more general or overarching “stable configuration”. But precisely the latter is giving room to the suggestion of an evolutionary transition from a perceptive cognitive event configuration into the direction of an object configuration, an idea which will be defended in this volume.

4. The object redefined

- initial approach
- the closing approach
- definition of “object” & stable configurations in animal perception

1. When after years of scrutinizing relevant publications in 2018 at last the insight dawned that the perceptual organisation of the Umwelt experienced by humans differs drastically from that of other animals I tended to consider both ways as radical opposite. Animals engaged in a event like scene ordered by dynamic Gestalt principles while humans felt confronted with a stable set of manipulable units present in front of them. This perspective allowed to distinguish sharply the characteristics of both positions.

2. However it became clear that the Gestalt ordering principles which I so far considered to be exclusively active in the event domain of animals, remained active too in the domain of the human perception of the Umwelt. I led to the insight that the Gestalt principles took a primordial role in any possible condition human or non human animals found themselves in but that in the hominin line the new development around the skilled application of the hands changed the character of the scene perceived.

My first version: What is of relevance takes the foreground in the perspective of the animal; humans on the other hand got confronted with a set of manipulable items in front of them. Both conditions were very different.

The actual version: What is of relevance takes the foreground and follows primordially the rules described by Gestalt psychology. However the importance of the role of the freed hands becoming ever more skilled in manipulation draws the visual attention to formal characteristics favourable for the execution of that practice. In a first phase it will be related to concrete and individual elements, a particular nodule after a while shifting in the direction of that particular type of nodules, in the end becoming sensible for formal characteristics like mass, weight, texture, rim etc. by this constituting a formal or abstract pattern. This pattern got generalized and projected onto every occurrence in the vicinity. While for the non human animal, the meaning of the environment is determined by the condition of the primary motives in relation to the abilities provided by the body, for the human an extra perspective came into play, moreover: it took a dominant role. For the non human animal the basic dynamic was about the regulation of the relation to what happened around, for the human that question became rephrased in “how can it be handled” (stress on “hand”).

What would fit the constraint of that pattern would in the end become called “object”.

At this point some remarks are in order.

First of all the later attributed denotation of “object” comes from the scholastic Latin “objectum” meaning: thrown in front of, placed in front of, con-fronting... in turn going back on the Greek “antikeimenon” or to lie opposite, oppose, withstand, repel. Obsessed as Westerners are with objects in the act of understanding all attention will go to the item itself while is as well stressed the relation pure and simple, not interweaved, not coalescent, not collapsing but taking distance from...

Secondly taking into account what already has been mentioned, “object” obtains its meaning from a very particular context. It refers to the set of characteristics favourable for manipulation. In that sense an object is to be understood as a function of manipulation. It is actually inextricably bound to it. It can only rightfully be understood as a pair, object can not be understood without manipulation and the latter generates objects in the perception, manipulable units or objects.

Definition: The term object is not a neutral denotation. It originated in the context of thorough developed manipulation and since then defined the world as a set of manipulable entities.

Thirdly, we are used to understanding terms as if they were no more than neutral denotations. One speaks of humans, minds, souls... as if it were natural kinds, elements existing in the world devoid of historic colouring, of semantic framing. There are objects in the same sense as there is air to breathe. But the question might be raised: do rhinoceros experience objects in their Umwelt, do earthworms do..? This wants to stress that terms are used as if referring to something natural while at the same time neglecting or even being blind that its meaning is embedded in a particular and historical setting.

3. The idea that animals would not experience “objects” in their Umwelt is welcomed by incomprehension and disbelief. Objects are natural kinds part of the world, aren’t they? The German language has a fantastic word for this mood “Glaubensunwilligkeit”. It refers to an impossibility to accept the very idea.

However, as explained under sub 2, object as a reference is tied to the act of manipulation hence organisms like bacteria, earthworms, fish having no hands can neither have something like an object in their field of perception.

That however does not mean there are no stable perceptual configurations appearing in their way of life. Because a Gestalt-figure rendered by an unique event can become consolidated to a stable figure in case the event is recurrent in a persistent way. A cat observing a mouse will not have to make an analyses and deduction each time anew. Repeated confrontation moreover confirmed positively by the fact it renders a meal, will consolidate a neural pattern adding it to an existing register of possible situations or preys. So yes non human animals will enjoy stable patterns but no, they will not take the form of objects because the latter is bound to manipulation.

Addendum

It is remarkable that in the 14th century “object” still got understood in the sense of that what got thrown in front of or confronted with. This begs the question what caused the turning into a new rather neutral or natural indication. The only element coming to mind is that in the 16th century the Aristotelian way of defining something according to its essential features gradually made place for the approach as introduced by Galileo to describe entities by the whole of their measurements. That indeed left a quite neutral description devoid of a particular meaning. It is the stage by Lorraine Daston coined as mechanical objectivity in contrast to truth to nature as the previous mode.⁸⁵

⁸⁵ Daston, L. & Galison, P. 2007. *Objectivity*. New-York: Zone Books.

5. Object, natural kind or construct

Introduction

“There was never selection pressure for internal ‘picture shows’ only for what vision could do in the service of external action.”

Goodale & Milner. *Sight unseen: an exploration of conscious and unconscious vision*. (2004:40)

The perceptive cognitive condition the human once shared with the species most akin can most appropriate be depicted in terms of Gestalt psychology. In previous chapters this did not get the attention it deserved. The actual contribution will try to remedy this. The following questions will be of relevance for a first part of the chapter: on ontogenetic level what might have been the initial condition and what is of importance from the perspective of developmental psychology? How is the earliest stage of life of the child characterized? What is the impact of the environment and what happens if that kind of influence remains absent? This is meant to be the main discussion.

The second part will be exploring the suggestion of images existing somewhere in the head. A radical approach will end this contribution which was all about the constructivist character of the phenomenal scene.

1. The initial condition, characteristics of the visual capacity

The choice to discuss the visual is obvious. This type of sensitivity plays a dominant role in the orientation in the environment, dominant because it falls back on the input gathered by 126.000.000 receptors compared to while hearing has to do it with a scarce 35.000.

1688. In a letter the Irish philosopher Molyneux depicts John Locke the following situation. Suppose, he writes, that someone born blind might recover the light in the eyes would he or she perceive the world as we all do? His question comes down to finding out if a naive realism would be justified or is what is getting perceived the product of a learning process? In his reply Locke points to the condition of a blank slate (tabula rasa). This, so he says will gradually be filled with the deposits of ongoing experiences.[\[1\]](#)

1749. Diderot publishes “Lettre sur les aveugles a l’usage de ceux qui voient”.[\[2\]](#) He explains that blind people who suddenly are able to see again will not at once understand what they see and that it will take time to relate what they already know on the basis of touch to what they now experience with the eyes.

Answering this problem fed by experimental data would only come some two hundred years later.

It follows from practices that are no longer considered to be acceptable as in the following examples. In some cases one in others both eyes of new born apes were blinded for a certain span of time. The purpose was to find out the effect of time varying deprivation (Austin Riesen,

1950) Hubel and Wiesel (1962) experimented with different environments in which kittens were going to be raised. One such environment only showed horizontal, another only vertical lines. In all cases the orientation of the kittens appear to be disturbed in a substantial way. Situations like these lead to the conclusion that recognition of the environment does not come in a natural spontaneous way but that external influences are of defining importance.

These findings became confirmed from a very different angle.

It happens that cataract is inborn. When occurring in Western countries it is observed quite soon and the appropriate surgical action is undertaken. In overpopulated countries for instances this might not be the case, certainly not when birth is giving at home. In so far the problem might be identified in most cases the people cannot afford the medical treatment. Fortunately there has been a project aimed at providing some of these children, in the meantime already older than three to four years of age, with the proper treatment.^[3] From a technical point of the view the surgical intervention was considered successful. However these children found it difficult to identify objects in their everyday environment.

However from a very different context there are cases documented of people with similar experiences. Mike May became blind by accident at the age of three. Forty three years later he had surgery comparable to the children mentioned. It too was consider to be successful. However Huber et al. report "(...) despite of the years of fully visual experience and more than a decade of recovered sight, M.M. remained profoundly impaired at interpreting visual facial expressions" (2015). Somewhat further in the text "(...) we found very little to no evidence of high-level visual responses in ventral temporal cortex selective for face, body, scene or object stimuli". (ibid:399) The reference made to object stimuli is of particular relevance for this discussion. Mark May in the end preferred returning to a life of tactile and auditive orientation.

Ackroyd, Humphrey and Warrington (1974) report on a similar case about a woman who became blind at the age of three and twenty three years later underwent surgery at one eye. Six months later she seem to be able to follow prominent objects but she could not identify the form. The act of following seems to be accomplishable without supplementary input. But the second part, the identification, seems to presuppose a proces of acquirement and consolidation of the learned. So these are two different subjects. Remarkable detail, this woman too preferred to return to a life as a blind person.^[4]

After the surgery being able (again) to detect pulses of light is one thing, interpreting – that is recognizing in a meaningful way – is another. For the latter aspect the influence of the teaching environment is of utmost importance, remember the kittens of Hubel and Wiesel. But there is more. According to Kellman whose point of view will be discussed later, there seems to occur a critical period. If the process of formation did not occur sometime before a moment between the second and third year of life, then acquiring the needed interpretive competence becomes difficult. According to Cathleen Moore, professor psychology at the University of Iowa, in that case the candidate finds himself in the same conditions as someone who later in life tries to learn a second language. This has been confirmed by the results.

Concluding: interpretation of visual stimuli is an effect of forming which preferably has to take place before the critical threshold has been reached.

But what might be the consequences if this condition has not been fulfilled?

To start with, on the basis of the experiments executed by Riesen on the one hand and these by Hubel and Wiesel on the other, the effects of misleading formation are clear. The presentation of forms which are not expected results in a disturbed orientation.

For the case in an upbringing under standard conditions, a normal psychological development, Kellman psychologist at the University of California, offers a documented overview.[\[5\]](#)

Before the age of sixteen weeks a situation occurs which he calls following Wertheimer “das gemeinsammens Schicksals” or “common fate”. Referring to research by Slater et al. Kellman concludes that this condition probably does not yet occur at birth (1996:23)[\[6\]](#) But what is “common fate” then referring to?

Infants perceive elements moving together as a unity.

Movement is the first keyword. Ostrovsky et al. stress the primary role of movement in the context of perception. (2009) This fact is well known by birdwatchers and hunters. Conversely taking a frozen position, offers an optimal condition for observation. In a very different context, publicity makers augment the attractiveness of their presentation by adding movement.

Moving, moving together in particular is a configuration which best can be described in terms belonging to the conceptual register of Gestalt-psychology.[\[7\]](#)

So in very first instance some elements moving together attract attention. It becomes *figure* while all other elements remaining diffuse instantiate the *background*.

In the period between six to seven months a phenomenon called illusory contours is taking place. Interrupted dashes for instance are being perceived as a line. At one year of age the child masters edges with this opening the path into recognizing and identifying objects.

Once installed it dominates the way the world is perceived.

The illusion provoked by the Ames-room provides a striking analogy. It has to be stressed that this illusion has to be experienced under particular circumstances i.e. or seen by one eye through a peep hole or seen as a projection on a screen. (*)

On offer is a frontal view on the sides and the back wall of a room, the latter ornamented by two rectangular frames (such as windows or empty picture frames). The illusion experienced is that the same person positioned in the left back corner seems to be only half in size then when positioned in the right back corner. How can the same person show a different height in one and the same room?

This illusion exposes an underlying principle: what is known determines what is seen. In this case it is known that the side and top-bottom lines of a room are straight and rectangular connected. With the anomaly seen the room is not questioned – it is taken for granted that it is straight and rectangular in the corners, instead the difference in height of the same person is experienced as extremely odd. Or what is taken as common knowledge primes what is actually seen.

In the same sense once on the level of common knowledge the world is taken to be full of objects this knowledge will organise what is perceived in a dominant way.

There are in this case of course more factors playing a decisive role.

That knowledge does not stand in isolation. It is part of a more general scheme of mediated manipulation in which objects take a central position. Secondly, reference has to be made to the

chapter in which the irreversible character is discussed because the same processes play their part in this case too.

(*) If not seen through a peep hole or projected on a screen, stereoscopic sight easily unveils the distortions in the makeup of the room.

So far for a sketchy overview of the developmental dimension.

But the question arises if someone like Mike May who in the end choose to take up a life as a blind person again instead of visual stimuli as guidance, does not experience objects? Most probably he does. After all, after the explosion taking place in childhood he did not end up in a void. His living environment acted upon him providing clues making use of other perceptual capabilities, moreover supplemented by special schooling.[\[8\]](#)

What is of importance is that recognition and identification of an object – in the very first instance a conceptual ordering raising up from out a Gestalt-configuration – has to be learned, be it visual or by other perceptual channels.

In summary

In first instance elements moving together are perceived as a unity best referred to as a figure in the sense meant by Gestalt-psychology. It is probable similar to the condition the hominin becoming the human in the end shared with the species most akin.[\[9\]](#) This idea finds illustration in the study of feral children (D.K. Candland, 1993)

Secondly, the recognition of an object as a sharply demarcated entity standing on its own and clearly distinguishable from other entities is the effect of a process of environmental influence, in particular implicit education. Meaning that the newborn finds himself thrown in a social context in which every participant makes use of a shared conceptual framework in which objects are presented as if it were entities belonging to the natural order. At offer is a world as a self evident fait accompli.[\[10\]](#) If this might remain absent in some sense as in the case of congenital cataract, experimental deprivation or a condition of blindness caused by an accident, then a disturbance is taking place, a disturbance in relation to people who partake enculturation in a normal way. This results in difficulties to identify objects, not only in the sense that the item in question fails to be named, but to recognize some configuration that normally would be called an object.

Long story short: objects are not entities belonging to a natural order present in the world prior to any act of perception. The recognition of a configuration as an object results from an educational process.

The following remark has to be added. The learned configuration identified as an object does not eliminate the older (Gestalt-)figure configuration. Both can best be imagined as the poles of a continuum. The condition of the primary motivation of the moment will define which pole will take the dominant role. A high degree of primary motivation will make the *figure* dominant, in case of a lower degree of intensity then the object configuration will fall in place. [\[11\]](#)

2. Images in the head

What does it mean to have images in the head? It is quite an unusual question in relation to what Pylyshyn observes “We know what it feels like to see. We look out and see the world, and we cannot escape the impression that what we have in our minds is detailed, stable, extended, and veridical display that corresponds to the scene before us.” (2003:2)

Is there as Dennett formulates it a Cartesian theatre in which an inner visual show is taking place? Something similar to a movie performance, a series of consecutive images? The views are dived. Stephen Kosslyn goes in the direction of a photographic depiction.[\[12\]](#) What Zenon Pylyshyn proposes could be called prescriptionism. He suggests that a faint visual impression is raised on the basis of some prescriptions in the sense of “suppose a cube...”. This has a stronger appeal to me because it is in line with earlier suggestions about stimuli of 2nd order reactivating neural data on the subject named.

The goal of this contribution is not offering an extensive discussion of the subject but to emphasize the constructive contribution. One also has to be aware of the difference of the physiological substrate with the phenomenal dimension.

Going back to Kosslyn and Pylyshyn, there are also suggestions combining both positions such as these formulated by Allan Paivio (1978) and Michael Tye (2000). But whatever the proposal is will be obvious that there is not a theatrical infrastructure present in the brain. This begs the question: what does it actually mean to say that there is an image in the mind?

Textbooks love to publish a Cartesian depiction showing an image entering the eyes, on the way is getting reversed from left to right and at the end of the journey is getting projected upside down. As an extra one is also getting informed about the blind spot, only a very small area producing a sharp “image”, colour-blindness on the borders and the continuous saccadic movements. There is absolutely no doubt that all these facts are correct but what about the experience itself of seeing an image?

Could it not come down to a specific type of awareness which has no photographlike characteristics at all but is taken for an image because that is what instances of awareness provoked by stimuli entering the eyes are named? In particular more so because of its historic anchorage in the invention of the black box followed in time by the camera producing a depiction characterized by a one on one accordance. The Greek “eidos” was not exactly understood as an image. In the middle Ages what the eyes produced was not so much a picture neither but an emanation of reality. That particular idea of seeing “a picture” indeed appeared rather recently.

But how to understand the man born blind also proclaiming to see an image?

It begs the question, what does the act of seeing bring forth?

What has been argued so far leads to detach “the seeing producing an image” as a conceptual framing from its strict visual connotation and to understand “image” no longer as a picture but as nothing else than an effect in the experience. In that sense it has more to do what a general type of experience raised by an amalgam of stimuli constituting an overall impression.

Seeing a picture then comes down a posterior isolation of a selection of features. At first one gets taken by a general impression. Then the focus formed by the local culture acts like a scalpel,

isolating these features which are considered to take foreground. So the general impression is taken apart into a visual, tactile and a scent component. The influence of the local culture and historical factors such as the invention of photography has been mentioned. But we should not neglect the fact that the visual channel is factual a dominant present ability for orientation oneself in the environment. It employs 126.000.000 receptors while scent has to manage with 10.000.000 still a significant number compared to hearing falling down to scarce 10.000. So disregarded the mentioned culture historical influences, the suggestion of seeing images might not come as a surprise. In that sense it seems natural to raise the metaphor of a "movie theatre in the head. Observe however that a movie offers a flat two dimensional representation, remarkably the same in experiencing images in the head unless we explicitly force ourselves to produce three dimensional constructions.

Organisms do not live in a world as a set of decomposed parts which they have to join in order to experience what is going on. They experience the environment as one dynamic tableau vivant in which what is of relevance forces itself as a bump onto the foreground.[\[13\]](#) But certainly in Western culture, taking things apart into smaller constituents is taken in with mother's milk in so far it became the natural stance in relation to the environment.

Going back to the initial problem "what does it mean to see – for instance – a flower?", the answer should rather point in the direction of an overall experience with emphasis on experience and not on a suggestion of something more picture like. The experience is one of meaning raised under the pressure of endogen and exogenous stimuli.[\[14\]](#) It is however remarkable that the mentioned overall impression is brought forth with no more than ten percent by external input while the remaining is getting fed by dispositions, automated programs, deposits of previous experiences and functions which neurally are available. In that case what does a photographic image in the head pretending a one on one correspondence mean? Would it not be more appropriate to call such product a neural construct instead of a depiction? A casual observation: in the previous sentence two different conceptual frames are mingled: one referring to the workings, the other to the phenomenon.

Back to the image in the head. Suppose one is bringing the figure of a known person not met for a long time before "the minds eye". Speaking out his or her name aloud as an outer stimulus or the desire to restore to contact as an inner will reactivate a semantic field or in other words the relevant neural configurations. That will give rise to a particular experience involving characteristics of the face, of the posture, of the way of walking and behaving, reminiscences of events in the past and all kind of important and less important details. The impression will be characterized by specificity – it will concern this person and not someone else, but also a sketchiness. Meaning that the face for instance will show not as a correct picture but more as shady patches more suggesting than depicting. So no sharp delineated contours, no zooming in on details. This vagueness could be attributed to the quality of stimulus. The eyes for instance do not grasp a general scene but a very tiny fraction measuring two to three degrees while the focus changes or jumps around five times a second. In the experience this composes a quite detailed depiction. On the other hand in the case of an inner or substituting stimulus such as a name, deposits are getting activated which at the same time are general instead of detailed but also fragmented because the raised content is referring to experiences which are of relevance.

Take for instance a condition of parsimony, a vague image of aunt xyz who was proverbial parsimonious would pop up – not that the same aunt had five dogs.

Llinas a Columbian neuroscientist is probably right. He argues that it in principal is no difference in having a image like experience fed external and one fed internally as in a dream. In contrast with what was thought in de middle Ages, there are no images projected onto the eyes, but stimuli which are converted into electric-chemical pulses bringing neural tissue into action which in turns generate what we call and experience as an image. The difference occurring can be attributed to a difference in quality of the stimulus. It can in a way be compared to the confrontation with “lemon”. The lemon in the real will activate strong salivation. The word or thought “lemon” will also activate the same type of salivation but less rich, but there will in principle be no difference between both cases.

All this points in the direction that actually there is no image in the head at all, which raises the question which way of representing would be more appropriate then?

All taking into consideration this might be obvious but it is at the same time quite remarkable that there is no one to one correspondence between the raw data reaching the surface of the eye and the result of having an experience which we call an image. What enters the eye is a small range of electromagnetic waves. So the representation of an almost completely closed black box is which the processing is carried out is quite close to what is really happening. Almost because there is a tiny surface in relation to the box which is sensitive to some forms of input. By using the metaphor of a submarine Gordon suggests a similar approach. (2004:127)

These suggestions are more or less on par with an image used by Popper be it in a completely different context. He describes the scientific enterprise as a man in a complete dark room looking for a black hat (which even might not be present). In our case one can rightfully refer to a dark room which through small openings allows a particular type of input which does not have the character of a picture at all. What is getting processed inside the box is a physiologic product fired up by electromagnetic waves with a different number of vibrations. So in the experience seeing a tree, the only thing which can be said with certainty in relation to what is happening outside is that there is a fluctuation going on presenting itself as the bombardment of electromagnetic waves with a certain number of vibrations. This fluctuation has however to offer a certain constant number of vibrations and so patterns otherwise there would only occur chaos.[\[15\]](#)

But then something happens which has affinity with what is known as the stimulus error as described by Titchener and Wundt. Someone engaging in introspection – which is the case in seeing images in the head – projects his experience onto the environment. However on the basis of what has been explained so far it will be clear that there is no one on one correspondence between the experience generated by the neural tissue and what is actually out there. Taking this to be the case anyway is an mistake. But surprisingly enough that is what is done by anyone looking around in the world. This is the condition commonly taking as normal.

Realizing however the real nature of what is bombarding the eyes in contrast to the rich experience it renders, one might paraphrasing the early Chomsky by referring a poverty of the stimulus.

On closer inspection this is also what happens in relation to other perceptual channels. There are no scents as such out there, there are no sounds neither, there are no such things as qualities. All

these sensations are products of the workings of the sense organs in conjunction with these of the neural tissue. In the case of seeing the electromagnetic vibrations man is sensitive for a range of variations resulting in what might be called a rich world. The mole being nearly blind has far less possibilities however contributing to what in a similar way could be called his world which it has to be added satisfies him – he has no knowledge of anything else. The point is whatever the scope in quality, is for both creatures seems to satisfy his need to negotiate the conditions he finds himself in. It is not the point of finding the ultimate truth. As Trivers, Ortega y Gasset and many others observed (BIB) the brain is not made to find the truth but support the organism in its task to survive. That is what actually counts. Man is the only creature questioning that and making a problem of it for the very simple that he disposes of a toolbox allowing to formulate questions hence generate problems of that type. The mole doesn't.

Rounding up, what about the questions of images in the mind?

This problem is embedded in the processing raw data resulting in the experience of seeing as the end product. "Vision" stems from the Latin "visionem" referring to the act of seeing. It is probably related to "following with the eyes". As an experience it did not call the problems mentioned. The act of seeing raised an emanation of what was out there, others took it for a reconstruction. It was part of life in a natural way in the same sense as taking a breath was. It was not problematic. If an artefact depicting a human for instance did or did not offer similarity, that was not really a problem. Take early Christian art. The faces are schematic, not personalized however they referred to a certain person. Similarity became a problem with the improvement of the technique making portraits. Striving to perfection in that field is characteristic for the Renaissance and it would reach its pinnacle much later with the introduction of photography. The importance of this is that the appreciation for something as pictures in the head got influenced by this trail. Are the pictures in the head similar to pictures produces by photography and holography?

A distinction has to be made between the operational and the phenomenal level. On the level of physics and physiology there are no such thing as an inner theatre in which pictures are getting projected. There are neural workings bringing forth experiences, a particular type of experiences, no doubt about that. But no pictures are produced. The phenomenal is the level of interpretation the mentioned experience. Split up somewhat artificially there are two branches of interpretation. One is based on previous experiences and is common in all creatures at least those provided with a nervous system. [\[16\]](#) The second level occurs only in those creatures able to compose a meaning giving story, a discourse or a scenario. However the appreciation raised on the first level is not put aside it is getting enrobed in a meaning giving interpretation. The idea suggested in the previous lines was the flavour of the interpretation varies the course of history.

In that sense the idea of pictures in the head is a metaphor with historical roots.

Bluntly posed, there are no pictures in the head. There is an experience characterized by the workings of the visual system which as a matter of fact is probably not picture like at all but which we have learned to interpret as similar to a depiction.

A final remark on the references made.

The impression might rise that little attention was paid to available sources. That is correct in a way but not completely. In writing this contribution we have allowed ourselves to wander around different ideas. But we are aware of the different strands in the literature, take for instance Gordon (2004), Bruce et al. (2003), Kimchi et al. (2008), Wagemans (2015).

But on the subject of experimental setups aimed at discovering the presence or conversely the absence of inborn capacities Gordon observes quite rightfully "This are the sort of situations faced by observers in many of the classic experiments that have sustained empiricism. But none of these existed in the African grasslands, where human perceptual systems reached their present state of evolutionary development." (2004:139)

This observation is related to what at the beginning struck me but I could not grasp.

The research setups seem to be organized around three points:

1. an independent and objective observer outside the scene (God's eye perspective)
2. a visual sensitivity or visual capabilities which are supposed to be present but of which the reach is not known
3. a set of diverse stimuli available to probe to supposed capabilities.

This is a setup characteristic to any laboratory situation trying to lock out any kind of subjective bias.

But Gordon's observation is pertinent because anatomical and physiological systems did not develop under circumstances considered to be ideal in the context of a lab, but in a tension between primary motivation and the fluctuations taking place in the environment at that moment. Being visual sensitive is one type of answer next to other options such as echolocation of the sense of touch. Subsequently this possibility develops in a direct relation to what is of relevance in function of the primary motives. The anatomical possibilities and the physiological workings are precisely functions of this situation. In the sense visual possibilities should rather be understood in these conditions and not in a setting of artificial sterility. In itself this already is a more positive orientation towards the subject but there is more. It would expose the conditions in which a transition from (Gestalt-)figure into an object configuration would become meaningful. It is not a coincidence that Gibson identifies the quality of affordance with the meaning of some implement.

In what got presented, two strands can be identified: empiricism as proposed by Gregory and ecologism by the mentioned Gibson. The former explains how raw data are getting captured by the eyes and consecutively processed into a "visual" experience. Gibson focuses on the unity of the perceptive and motor dimension. In the literature it seems as if both are existing side by side as two very different approaches. To me they are rather complementary.

3. A radical constructivist observation

In a presentation of the World Science Festival probably dating from 2014, Sheila Nirenberg neuroscientist at the Cornell University projects the following scheme.

On the left side appears the face of a real world baby. The middle begins with a column of what should be taken as the different types of cones of which the activity transforms into electrochemical pulses followed by a row of spikes. This results at the far right side in the picture of the baby in this case generated by the brain.

The idea is clear: there is something out there in the world, after having entered the eyes the stimuli are getting processed in the brain bringing forth a depiction of what has been noticed out there. The interesting aspect of this presentation that is makes clear that there are no images as such reaching the eyes but mechanical-optical pulses being transformed into electro-chemical spikes and that the brain consecutively produces something which is getting experienced as an image. In short: the human does not see images, they are getting produced.

The conviction prevails that the by the brain generated image depicts the world how it really exists out there. But as Nirenberg clearly shows in her presentation, this is not the case.

However there is something not quite right with her presentation.

The offered presentation suggests a real existing baby-face in front of the eye of the observer, a baby remarkably similar to the picture shown at the right hand end. But if the retina only registers a series of optical pulses functioning in some mechanical way, how can an baby face in front of the eyes be observed? Because in the same sense as there is nothing cat-like to the word cat, there is nothing baby-face-like to the optical pulses bombarding the retina. Only in the Middle-Ages was thought that objects in the environment projected minuscule pictures of themselves onto the eyes, but this idea has long been abandoned.

What is experienced is a product of the neural tissue.

But the criticaster will object "there has to be a baby out there in front of the observer?!"

This allows to refer to the confusing of different meaning giving frames of reference.

In first instance there is the day to day practice. Within that context any creature provided with the same perceptual apparatus will in a confrontation with the same situation perceive the same scene. Secondly, people whatever their language will interpret the input as the face of a baby. So on that level of experience there will be no problem at all.

But that is not the frame of reference at stake here. From a pure theoretical interest the question raises into the statute of the pictures generated by the brain: are these depicting the world as it really exists out there or are it constructs, particular ways of conceptualisation raised by and so related to disturbances in the chaos out there?

This is a very different perspective. The criticaster infers from the second option that the first – day to day life – would come down to a pure fantasy, which is not the case.

So far for this correction. On the statute itself, this has been discussed at large in other contributions.

I want to draw the attention to the movement taking place on the level of daily life. It actually is similar to what is in the literature known as the stimulus error attributed to Titchener and Wundt early twentieth century. In that case the clinic psychologist expects an answer from the patient fitting his own frame of reference. It is a case of projection.[\[17\]](#)

But that is also what Nirenburg shows in her presentation starting with the face of a baby in the real world. What she should have shown to begin with was a chaos with certain invariances but nothing similar to a photograph of a baby face. She then in the end should have projected the image generated in the brain onto the mentioned chaos because that is what the observer experiences to perceive: not the initiating chaotic configuration but the experience at the end of the neural processing.

Moreover the constructive character of the workings of the perception and of memory are well known in psychology and not contested but these are never or seldom related to judgments about the knowability of the world as it exists in itself. Remarkably many disciplines still seem to be mesmerized by Plato's view on true knowledge on the one hand, naïve realism on the other. These discourses account knowing the world as it really out there for possible, maybe not immediate, maybe not easy, but overtime in principle possible.

Seeing pictures in the head considered as photographic depictions, the idea of being able to know the world as it really is out there are discourses grounded in history. But how could an organism, any organism step out of his embodiment and perceive the world as it really is out there? This question is inexistent for the mole under the surface and for the ape the human is akin to. Only the human by his ability to consider and to ponder can confabulate questions like these.[\[18\]](#)

Distinguishing both levels is not without importance, it reaches further than a mere theoretical interest. The discourse labelled naïve realism assumes the existence of an objective reality independent of an observing instance, on top of that the fact that this reality can be known by man. This does not take more than dis-covering, un-veiling an intervention which will improve with the perfection of the instruments sustaining perception. This conviction lives in many scientists. Even biologists and psychologists quite aware of the limitations of the senses often produce formulations respecting the idea of an objective there existing reality.

Observe however that the concept of a "there objective existing reality" is indeed a conceptualisation, a draft, a model expressing a particular perspective on things.

The alternative view recognizing the formative functions of the body, accepting fully all consequences of this fact, opens a gateway into changing these ingrained convictions. After all, constructs can be altered, can be reconstructed.

[\[1\]](#) According to Gordon, he does not argue that man has to learn to see as some psychologists seem to suggest. (2004:120)

[\[2\]](#) Diderot is one of the authors of the French "Encyclopedie" and the letter is on the subject of blind people for the profit of a better understanding by those who see.

[\[3\]](#) Prakash.org mentioned in Held et al. (2011)

[\[4\]](#) The authors assume that particulars cells known as feature analyzers did not develop. This allows two possible interpretations. Or they are present from the very beginning but they have to be activated and if not the ability is lost, or they take form under socio-ecological pressure. But of importance here is the finding that if the external conditions are not present or the formation does not take place, the capability does not show. In line with the work of Hubel and

Wiesel with kittens they suggest a critical period. Van Noorden et al. (1970) refer to a similar finding in their work with apes. However Ackroyd warns for extrapolation he however suggests a critical period in the human child somewhere between two and three years of age.

[5] In Gelman et al. 1996, chapter 1

[6] "Slater et al. concludes that the perception of object unity requires a period of development in infancy" (Gordon, 2004:36). Piaget in turn concludes that the perceptual abilities at birth are very scarce. (1954) Hebb observes that the perceptual formation on the basis of experience develops quite slow. (1949)

[7] This got introduced as a reaction on the practice of structuralism to take a given apart into explorable constituents. Gestalt-psychology on the contrary focuses on the whole.

[8] "The newly sighted are not simply people who lacked vision, but people who have learned to live with their other senses" (Gordon, 2004:34) It is remarkable that an observation like this not only expresses that the recognition and identification of objects is acquired making use of other channels at the same time remaining silent about objects being elements belonging to the natural order of being products of some constructive input. The way it is suggested it is as if without any question objects are indeed things belonging to a natural order.

[9] Reference made to Darwin in chapter two of *The Descent* "the fundamental intuitions must have been the same" and "My object in this chapter is solely to show that there is no fundamental difference between man and the higher mammals in their mental faculties"

[10] Alain Prochiantz molecular biologist at the College de France, observes that a homo sapiens not submitted to culture in biological sense remains a homo sapiens, but then one without language, without tools, without everything constituting the encultured human being.

[11] Compare with Gordon "(...) it is possible that we can perceive constructively only at certain times and in certain situations. (...) If perception is neither a set of capacities fully determined at birth, nor completely learned during life, then in terms of theory there must be something analogous to a pendulum that can swing between these two extremes." (2004:140)

[12] What is summarized here a simplifications. For a more elaborated overview, Pylyshyn (2003)

[13] Cfr. J.J. Gibson's ecological approach stressing the unity of perception and motor, the organism and its environment.

[14] For an early discussion on the difference between external input and the inner experience, Hermann von Helmholtz, *Ueber das Ziel der Fortschritte der Naturwissenschaft*", 1903:367-98, in particular 392.

[15] Gibson's invariance.

[16] The limbic system playing a central role in appreciating an incoming stimulus.

[17] For an extensive exploration about projection being part of constructing a perceived reality, Hoffman, *The case against reality* (2019)

[18] *Philosophy as If*, by Hans Vaihinger of the many fictions we live by is highly recommendable in that respect (original 1911, first translation 1924 .

6. More than one object

Abstract

The central topic in the first hypothesis of “The Forgotten Transition” (2018)[\[1\]](#) is about objectification. It has been suggested as the turning point in the development of a branch of species, in particular for the way that species from then on would relate to the Umwelt. It lifted it to an exceptional position to say the least.

But there are also other appreciations. Husserl for instance in “Die krisis der europäischen Wissenschaften” (1936/1954) thinks very different on the subject. It has pushed pre-scientific knowledge into oblivion. Worse, it is considered to be responsible for a rampant mentality reducing all what exists into exploitable matter, into a commodity. The idea of alienation is not far off.

Two very different appreciations, what to make of it?

Putting interpretations in a historical in perspective

On the first meaning

Through the different chapters the positive approach already enjoyed a wide interest. The following will only offer a short reminder.

The difference between the tools used by apes and humans cued the insight. The tangible implement that can be observed can however not exist without a – be it invisible – cognitive complement. But early humans and not-human apes are akin as Darwin observed, not only on the level of anatomy and physiology but also in undergoing the same conditions of existence resulting in a similar way of negotiating the problems encountered. Precisely for that reason the clearly observable difference in tools also suggests a diversion on the level of perception and cognition. The early human must in spite of the many correspondences have been seeing the Umwelt in a somewhat different way.

In the book the material component has been called the object[\[2\]](#), the perceptive cognitive dimension the objectification. It is important to consider that whatever the cause of this difference, it is always the way the difference is publicly observable, the so called phenotype that has to prove efficacy. The realm of the observable is composed by being, by action, by interaction, by manipulation in case of the hominin whose forelimbs no longer are recruited for locomotion so the hands become more free, hands engaged in mediated manipulation... all factors of importance.

It justifies labelling this process as technique. The Greek “tèchne” refers exactly to that. It is this skill observable in public underpinning the success of the species in maintaining itself. It is the catalyst making the species particular. Moreover by a process of association the means

sustaining manipulation open the gateway to initiate imaginative displacement in space and time thus providing the basis for later construction of narrative and scenario-building.

Long story short: the world is full of objects inviting the hands to act and objects becoming available to act upon the world in a purposeful way.

On the second meaning

Is that the topic Husserl points the arrow at? Apparently not. He criticizes a particular historical interpretation holding a certain appreciation.

As explained the first chapters were about a branch of hominins using means in a different way in negotiating the environment compared to the practice of species most akin. One of the side effects allowed initiating in the imagination displacement in time and space. The combination of the manipulation of implements in function as 2nd order stimuli and the raised effects in the experience opened the gateway into composing scenarios, simple at first, more complicated with time. These interpretations or versions are taken to be natural truths. If a tree was attributed a soul then the tree was considered to have a soul indeed. South American native Indians considered the sun to be of divine nature, for the Persian Zoroastrian this role was taken by fire etc.

The fact of importance in this case is that the content of a version whatever it is about, is variable in spite of the fact that the people involved were convinced of the undisputable natural invariant truth of it. It is this variability across historical periods that will be discussed further.

Starting point somewhere in historical time

The Pre-Socratic period will serve as stepping stone. The way the world was understood would be called magical mythical today, but as mentioned it was taken to be absolutely depicting reality.

The position of the existing deities did not get questioned neither that of half deities living amongst the people. Life was the effect of the favourable or adverse relation to them. Verbal expressions have to be taken as articulations of existence. It is "that what is"[\[3\]](#), and it does not become questioned. It is also called the pre-scientific way of thinking[\[4\]](#), a mode shared across cultures. The religions based on the book offer revelation. Also the Veda's come down to the divine instances revealing what life is and how to live in order to do that in the most natural way. This is basically the situation when according to Geoffry Lloyd (1991) in places around the borders of the Mediterranean a particular condition occurs.

The coast was populated by merchants being well-off. Resources were available allowing the descendents a good education in which discussion and debating was encouraged. But the problem arose that no criterion was available in order to decide which version in the debate could be considered to be most decisive. That open or problematic situation was the background against which "nature" gained a new meaning and status. It became general and more abstract concept equated by Aristotle for instance as that what is true in most case and at the same time the end, the ideal (ibid: 428). It acquired the character of something against which that what was open in the discussion could be balanced. With this instead of different versions as articulations

of existence to coexist, a new era started in which different positions could be judged against a neutral instance.

But remember that the articulation of existence was not questioned, it was boldly stated “that what is”. But now the latter became a placeholder for the new understanding of nature which over time it provoked in an evident way a question: “what is that – that what is, what is the character of that what is?” Nature as an independent acid test, became questioned, it became a problem in itself by this introducing a new period in the history of Western thought[5]. It as a matter of fact discerned Western thought from other cultures. Of course some also brought forth insights which could be called “scientific”[6] but always in function of some deity. Think of middle Ages in the West when Christianity was dominant. Knowledge had to be found *in order to* enlighten the workings of God. But what happened in the period mentioned was rather secular[7] and it defined a particular perspective on the world. What was the nature[8] of the world that was? Lot of answers became at offer. Some suggested that water was the ultimate substance, others thought of the earth, or air or fire or atoms or even an all encompassing unlimited condition (apeiron).

To remember is

- that instead of a mere articulation of existence
- a stable instance got introduced allowing the expression of the previous to be evaluated
- this in turn provoked in a self evident way the question into the nature of that what existed

This refers

1. a) to the establishment of a particular way of thinking about the world, and
2. b) it introduced a theme, an object which could be questioned – the main event however being the introduction of object as a type.

Taking a step back the following question can be asked.

As the term “object” has been used in both versions, would there be a relation and if so in what sense?

In version 1 what became called an object came down to focussing on a particular type of implement sustaining action in the end leading to the reorganization of relevant input into a stable pattern. Object had a place in action, in manipulation and could therefore rightfully become labelled technique. The meaning collapsed with the use.

In time that very same object obtained a particular use. It served as a stimulus of secondary order and as such it reactivated reminiscences of events taken place in the past. This opened the way into composing narratives about events experienced in the past or others planned to be realized in the future, so to compose stories and scenarios.

The structure of this act of reactivation comes down to a material cue to be necessary in order to initiate the reactivation mentioned. But as the discussion in the previous paragraphs showed, the semantic payload fired up by that act is prone to changes.

Referring to an object which became problematic (the nature of what is) is a very different thing than the material object used to provoke. In short, however the same term is used, and both are related, an object taken in technical sense is very different to what is becoming an object on the semantic level.

The first fits a function and is as such stable, the second is a meaning prone for changes against a changing historical background.

The changeability of the semantic content should however not be considered being noncommittal. Whatever the guise the “story” adopts, ideology, religion, philosophy, scientific or common sense, it

underpins the understanding of the world and as such guides behaviour.

So far for the different meanings of one and the same term “object”.

Husserl's critique

But in the introduction Husserl's critique got mentioned and as this by many is taken to be of determining importance, it is appropriate to – quite superficially – explain how I understand this development.

Remember that we started by mentioning that descriptions of the world came down to mere articulation of existence. Then we got the introduction of nature in the sense of a neutral outside of human subjectivity existing instance – an object to be considered – in turn provoking the question what the character of that instance might be. In that sense nature became objectified and that is the first meaning relevant in this depiction.

We now take a step further into the middle Ages demonstrating a particular idea about the character of an object mainly going back on ideas from Aristotle. Apart of a thing standing on its own, its dynamic character was one of the most striking features. It had a purpose, a natural movement. Light objects were inclined to go up, heavy ones to go down. A stone for instance fell because it wanted to be joined with the place it was most akin with. Blood as another example was the emanation of the force of life. When a dead penalty was executed, the blood was collect for people in that case older then the executed, to be consumed. As such they expected to profit from his force of life. There are stories going of nobleman drinking the blood of very young children for that very purpose.[\[9\]](#) Further illustration of the mentality in the middle Ages encompasses comparison of micro and macro cosmos. Crollius an alchemist from the 16th century also practicing medicine considered the stars in the nightly sky as connected to particular plants down on earth. In all this correspondence was an important criterion. The windings in a walnut for instance looked very much like these in a brain, some it was considered a good remedy for curing headache. In short the world was full of signs. They were considered to be signatures of the meaning given by the supreme. Counting with Arabic-Indian numerals had to be avoided. Zero was a sign of the devil and as such completely out of order. Remind that the introduction of the decimal system dates from no earlier than the 11th century, in Western Europe only since the 16th century. The bible was written in Latin and God's meaning could only be deciphered by the clergy. All this might not seem very relevant for this exposition, but the goal is to picture somewhat the atmosphere of dynamism and all being full of meaning in contrast with what will be coming in the following centuries.

This is not the place to go into detail, but a tension between Christian religion and philosophy of nature^[10] the form struggling to harness the latter will not come as a surprise. It is against that background that Galilei^[11] appears on the scene stating that God did not write one book but two. The book in which nature was deciphered in the language of mathematics supported the endeavour to understand God's meaning expressed in the bible. This type of idea did not come all of the sudden. The Franciscan monk Roger Bacon had, three centuries earlier already, encouraged experimentation. Bishop Oresme cautioned not to accept knowledge from the past all too easy. One has to be aware of the fact that then the conviction lived that everything already was discovered. In that respect gaining wisdom come down to taking cognisance of the writings of the elder. On another track but equally of importance: mathematics enjoyed an increasing attention.

Experiments characterized by the measurement of conditions, noted in figures which could be compared and as such guiding new trials became ever more important.

Regularity was not new at all, day and night, the seasons, the crops, the migration of birds... all showed a kind of regularity. But the form expressed now was the fruit of human intervention. Think of Tycho Brahe, astronomer, astrologist and alchemist who registered with utmost precision the positions of the heavenly bodies allowing prediction.

These are only a few examples of a system which would change the way of gathering knowledge profoundly: the measurement of positions or conditions, changing positions followed by measuring anew, comparing the results, bringing patterns to light and prediction of the result of interventions still to be executed.

In his masterly book "De mechanisering van het wereldbeeld" (1950)^[12] Dijksterhuis emphasizes the part of mathematics. Mechanic comes down to the study of movement and that exposes itself as sequence of measurements. This is one of the steps taking demonstrative explanation in the direction of ever greater degree of abstraction. This transition seems silent but it is of tremendous importance for the way science is going to develop.

But what should be in focus here is that the Aristotelian object characterized by potency and dynamic is not the most suitable model for an approach of this type. The measuring Galilei did not need all that dynamic, he confined the focus to static moments. A side effect of the particular way of doing things was that if an action was executed under equal circumstances then the outcome could with certainty become predicted. These conditions initiated the object to become redefined as something present there, inert, prone for manipulation and measuring in a four dimensional frame of reference.

It needs to be stressed that the redefinition never was an intentional act but the consequence of a practice which proved to be useful.

Concluding based on this move over time the appreciation of how an object was taken changed drastically.

The new approach promoted the efficiency of human intervention in an exponential way. The registration of measurements became an essential part of the description of the world. It allows registering electrical phenomena in tables, by this demystifying them and facilitating manipulation. Even human ingenuity one considered a gift from the divine became prone for the measuring intervention as is the case for labour. The latter is getting expressed in the

language of numbers, getting analysed, divided and reorganized into new combinations improving efficiency and effectiveness. This is a movement which is not that easy to counter.

But of relevance in relation to Husserl's critique, the human seems to show an unstoppable propensity to expansion in a way not occurring in other animals. Predators limit their actions to what suffices to survive. Even hoarding species refrain themselves to a certain period. But in the human species all boundaries seemed to have disappeared. Think of the Acadians, the Persians, Hellenism and the Roman Empire. If something slowed down this tendency, then it was the limitations of the resources themselves. One horse offers the power of one horse by this exceeding that of man, but is at the same time restricted that the power of only one horse. But the new method allowed an exponential increase of efficiency and with this a deluge of conquests, colonisation and exploitation went off.

Precisely this mentality of an unrestrained tendency of exploitation, reducing all what is to an exploitable instance, into a commodity was Husserl and contemporaries a thorn in the flesh and the subject of strong critique.

As a historical report this was an extremely simplified version. The idea was merely to clarify the difference between the object in its technical function as a tool opening a new range of possibilities and, the spin-off allowing narration in which an object to be discussed is taking position. In criticizing objectification only understood as a relentless form of exploitation, other interpretations like the articulation of existence and the Aristotelian understanding are getting neglected. But most important, the awareness that exactly objectification embedded in a technical gesture which is responsible for all human characteristics, is lost out of sight completely.

The mind body problem

However the following remark transcends the scope of the topic of this contribution, it would be a shame to leave it unmentioned. It is about an inadvertent but none the less important consequence of the redefinition of the concept of object.

Remember the atmosphere of the middle Ages, pulsating, dynamic, everything connected to everything else, any event not just an event but a meaningful sign, in every aspect life comes down to one dynamic tension.

We focussed on Galileo in particular the practice of trying out, experimenting, noting down conditions in order to compare with later experiments. For that purpose he did not need more than the form characterized by measurable dimensions. The success of all this resulted in the object in the experiment gradually and unintentionally becoming redefined in terms of the mentioned characteristics. It became a form remaining passive in the scheme of experimental actions the scholar had in mind, every step of the process to be expressed in terms of measurement.

It immediately becomes clear that in an approach like this a lot of the object as understood in the Aristotelian sense was left out, not in the sense of pushed out but simply being superfluous.

But that did not imply that these dynamic dimensions evaporated and did not get missed at all.

These characteristics shifted in the direction of a corpus of already existing opinions on the mind. By way of illustration, the soul had to do with the very important religious dimension of life – deciphering the will of god and living according to his rulings while the mind had to do with intellect in understanding the world in most cases as a servant of the religious dimension[\[13\]](#). But now the remnants superfluous in the mentioned movement became thrust upon these. While the first about religion and mind opened a more cognitive perspective in trying to understand and following the guidelines, the new payload had more to dynamics and perception with some overlap but also some very different content. So the mind became quite problematic getting hold of it[\[14\]](#).

What is the picture to appear? On the one hand the world in its material guise understood as a system of mechanics and the psychic dimension becoming very different to that, escaping the laws of mechanics. What Descartes proposed, the *res extensa* following the laws of mechanic (Galileo) describable in mathematical terms, the *res cogitans* provided by God following very different lines.

This perspective a) introduces a sharp duality and b) the psychic side is an amalgamation of contents from the Middle Ages laden with remnants of Galileo's move. In the latter the actual so called hard problem can be recognized.

So Descartes did not invent this divide, he expressed it in terms most clear. [\[15\]](#)

7. The meaning of grammar of action in stone knapping for human cognition in general

(adding: Davidson in Nowell & Davidson, Stone tools... 2010:194; offers references)

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Introduction

Dietrich Stout and colleagues propose a “Grammar of action in human behaviour and evolution”. The title refers to human behaviour and evolution in general, the contribution offers an analysis of the detailed manipulations applied in producing stone tools. The former promises a hint into the secrets underlying the human condition based on the rigorous analysis of observable manipulations. These are very different levels. This contribution will discuss this difference but focus on the importance of the broadest approach.

The grammar of action

“For more than 60 years, the serial ordering of behaviour has been a core topic for the cognitive and behavioural sciences. Enhanced capacities for complex action sequencing support distinctive human behaviours such as language, imitation and tool-use, and are fundamental to the flexibility that is a hallmark of human intelligence. It has been suggested that this implies a unitary evolutionary and neural foundation for human cognitive uniqueness across domains but this remains controversial. Although modelling suggests computational similarities across behaviours ranging from foraging to language-learning empirical investigation has been limited by a lack of objective, generalizable methods for describing, quantifying, and comparing the sequential structure of diverse, real-world behaviours. In Paleolithic archaeology, for example, investigation of long-standing hypotheses about the evolutionary relationships between tool-making, language, and cognition have been hampered by the lack of an objective metric for the behavioural complexity of different ancient technologies. Here we adopt a data-driven computational approach to this challenge by using grammatical pattern recognition algorithms to measure the structural complexity of behavioural

sequences from modern tool-making replication experiments – effectively extracting action grammars for critical survival skills from the human evolutionary past.”⁸⁶

This rather long extract catches the core of the set up of the research.

What are the conclusions?

Different techniques such as Hidden Markov Systems, K-Sequitur and the occurrence of Shannon’s entropy allow a detailed and quantified description. It showed that in the production of an Acheul type handaxe two levels of complexity occur while Oldowan type only one. It might provoke the impression that as a critical reader I have been all too short-sighted but this is actually the core of what is getting concluded in the article however with far more detail in the domain of statistics and of neural investigation.

Apart of the fact that this conclusion seems rather trivial, however confirmed in a rigorous way what actually is in the open for all to see, there is something else feeling odd.

The introduction silently promises a glimpse on some *deus ex machina* fundamental for human way of rendering intelligence. But the research discussed is focussed on a quantitative description based on analyse in which statistics play an important role.

Should it rather not be one or the other, either a broad perspective or a restricted window on a particular type of action? What can the latter add to an insight on the former? What does an increase in complexity in serialisation tell about the type of knowledge characteristic for the human?

But there is yet something else feeding dissatisfaction on my part. The following analogy will help to understand.

On the scene appears the usual visitor from Mars ignorant about human behaviour. The creature will be confronted with humans playing a game of chess.

There are two possible starting positions.

1. or the martian will be left completely uninformed while he has to find out what the scene in front of him is all about;
2. or he will receive some introduction on the goal of the game and the name of the pieces and provided with this basic information he has to find out the particular moves and the general tactics.

In the first position the visitor is completely ignorant, in the second he has knowledge of the concepts and possible operations.

Extrapolated to the actual situation the first position can eventually provide an overall view on the character of human cognition, while in the second the Martian equipped with basic information is already getting launched in a particular direction. That could be helpful but at the

⁸⁶ Stout, D., Chaminade, T., Thomik, A., Apel, J. Faisal, A. 2018. Grammars of action in human behavior and evolution. BioRxiv, preprint. Doi: <http://dx.doi.org/10.1101/281543>.

same time also blinding. The concepts offered in advance force the understanding in a particular direction. In virgin scrubland any direction is possible but if there are remnants of an existing path the direction is implicitly signified. The allegation is that the choice of investigating the operations concerned in fashioning a nodule into a tool already installs a particular framework guiding into a possible understanding.

This critical remark raises the question what kind of approach would be more appropriate for unveiling the cognitive particularity of the human?

The basic pattern

An analysis and description as offered by Stout et al. is all too strong focussed on sub-operations. A step back widening the perspective is required.

The very first question to ask is about the basic aim of an organism. Aim not be understood as the achievement of a certain goal in a far future but rather as what is the sense of existence while sense is rather synonymous with life itself. What is the basic drive, what is the most fundamental motivation of any organism? Darwin in the last paragraph of "The origins of species" refers to growth and reproduction. Indeed any form of behaviour of an animal can be understood as the fulfilment of these fundamental motives: acquiring food in order to sustain life, looking for a mate to reproduce and taking action to avoid a harmful confrontation. As such the existence can be understood as a never ending endeavour to regulate the primary motivated tension in relation to turbulences occurring in the immediate environment. This type of behaviour has by Watzlawick et al. (1967) appropriately been coined relation regulatory. Further, how an organism experiences the world, what type of world it seems to have has been referred to as world one in "The Forgotten Transition". And on the level of understanding Pamela Lyon, Fred Keijzer and Van Duijn refer to a minimal form of cognition.

This in a few words the basic condition shared by all organisms.

The primary motivation provides direction to all what is alive. This is concretized by all means the body provides. For some creatures the whole of the body is involved like with a constrictor, some have special parts like the muzzle of a grazer or a bird using beak and claw, or the front limbs like bears or even better apes and monkeys. As such the first regularity, the first pattern is this fundamental drive incarnated by the form and the capabilities of the body.

The second pattern

Of course we are most interested in the comportment of the species most akin. They move around on all fours, knuckle walking. The back is in a diagonal position forcing the gaze to a

nearby zone on the floor. The hands skilled in grasping tree branches are also suitable for grabbing food and holding infants. Some species use stone tools, like in the case of an anvil and hammer to open nutshells. This already shows a particular structure by different operations being executed in a particular sequence, serial ordering is already present. It is a matter of fact inherent to the way the apes are built. Further observation shows that tools are not transported over long distances and that the use remains restricted to a particular situation. All this underpins the idea of incorporation, the implement becoming part of the bodily engagement. But despite these limitations the use of an implement already provides some advantage. In first instance it protects the skin of the palm and secondly the hammer nodule augments the mass and by this the striking force. Furthermore throwing stones or holding off a danger using a stick increases the range in space, the same for using a twig as an ant fishing rod. It also increases the type of food as in the example of the nuts. Being bound to the actual and the local, a direct entanglement in what is happening (not able to reflect on a given problem), incorporation of action supporting means, these are features characteristic for this phase of development. The abilities find some extension but the fundamental dynamic and organization of behaviour remains the same.

Change as third pattern

So far not one single species shows a spectacular qualitative leap. Big cats still kill the way they did, grazing animals continue their activity as always and so on. Only those branches of species which in the end will bring forth the human testify of a particular evolutionary parcours. The last common ancestor lived in the canopy and spent also time on the forest floor. Doing that he made use of all fours, the front limbs in a knuckle walking position, the wrist locked to provide the strength needed. Some groups remained longer on the bottom and gradually developed a bipedal posture and gait. The front limbs lost the supporting function but they were nevertheless already skilled in other functions. The hands for instance were proficient in grasping fruit and holding an infant and some apes were even skilled in the manipulation of action supporting implements. These skills "suddenly" found themselves in an open space. Exploring and exploiting the mentioned skills further seems a natural development. Anyway whatever the speculation on this matter, the tools unearthed by anthropologists testify of an improvement. But all in all this development shows improvement in the sense of becoming better in practice but it does not show yet a radical change. A chimpanzee breaking the shell of a nut with a hammer and anvil is already remarkable but this did not open the gateway into a complete new way of negotiating the Umwelt. Taking the contemporary cognitive capabilities of the human into account there must have been something else going on.

The stone tools found provide actually hard evidence for radical changes. Take the Acheul hand axe. The character of older tools of the Lomekwi and Oldowan type can be discussed, but the apparent standardized teardrop form of an Acheul no longer.

What has changed and must have been changing with it?

As mentioned the introduction of an erect posture is not only related to the way of locomotion. It also has other effects such as changing the visual perspective. The visual stage changed from a nearby frontal segment mainly focussed on the forest floor into a wider, horizontal field. Freed of locomotion supporting functions, the intensified manipulations of the hand attracted the focus which in itself already had been reoriented. All this is not to understand in a teleological way, in the sense of “it needed to go into that direction of development in order to”. It rather should be taken in the sense that the circumstances became of that nature that they invited or provoked this development. It could be said that the situation in a sense became affordant, all circumstances were such that it had to happen – as an effect and not as a goal.

Observe that in this approach the impact of the manipulation of the hands is leading, at least playing a role of equal importance with the visual. Today we are all too inclined to think of looking first and then acting in according to what has been observed. But the reaching out and grasping is at least as important if not more.⁸⁷

As a note in the margin, stressing the importance of the motor dimension is justified but actually here we are trapped in a typical Western analytic way of thinking and modelling. Things are taken apart so that they fit into a mechanistic scheme of cause and effect. Useful for computation and estimation indeed, but on the level of biology and ecology would it not be more a case of one engaged movement of which both are dimensions and not separable parts existing independent?

Picking up where we left, the intensification of the circular action between the motor and the visual – the focus on the hands, will over time⁸⁸ result in an increasing attention for particular features in turn changing the perceptive cognitive organisation of input. The following analogy is not exactly what is meant but it provides a hint.

Take a Westerner who never left his village suddenly finding himself in a Chinese environment. He is familiar with the type of writing based on the Arabic alphabet but what he now finds represents to him no more than a mess of thin lines and dashes absolutely devoid of meaning. After a while he is getting used to some of the ideograms, becoming able to decipher particular patterns and attaching meaning to it. In the end he will become able to read the meaning in a

⁸⁷ The research into the workings of mirror neurons support this approach.

⁸⁸ The enormous window of time has to be considered. Between Lomekwi and Oldowan there is about 700.000 years, between Oldowan and Acheul from 800.000 to 1.000.000 years. So the development sketched out here spreads over many generations.

direct manner that is, without the need to study the particular ordering of the signs. He will “see” the meaning.

It makes clear the trivial fact that meaning is not embedded in the sign itself. That is what it is: a configuration of dashes and lines. What changed is the process of interpretation applied by the visitor.

As said, this analogy is faulty because in a phylogenetic perspective the implements manipulated by the hands are not understood as meanings as in the case of the ideograms. The case here is that “the eye” becomes ever more sensitive for certain formal characteristics favourable in relation to the use of the implement. In the case of the ideograms the relation took place between eye and meaning, here the relation is about eye and use. This of course also bears a kind of meaning, but the stress here is not on that but on the formal characteristics. That is the form of the implement, the mass, the handiness, the affordance all in relation to a particular use such as carving or scraping.

What exactly is changing in the act of looking?

The implement is slowly getting separated from its character of being incorporated. It gradually becomes something standing in its own right. It becomes a particular type of configuration taking the foreground. It becomes a form in isolation which can be recognized not in the sense of fulfilling a certain described criterion but as something fitting the hand, almost asking to be taken by the hand in order to execute this or that action. It has a circular character: looking out for discriminates favourable characteristics as in the case of a sculptor chipping of and neglecting material which is of no use, and conversely the remaining form sucks up the focus and sharpens the attention precisely for the characteristics of relevance. In anticipation: the Umwelt will increasingly become understood in function of the manipulability, it will become a set of manipulable entities. This is a very different perspective in contrast to a phenomenal scene purely defined by the condition of the primary motives. As such it signifies a first moment of radical difference.

Two issues are of importance.

What has been described is happening in a context of manipulation in the broad but also in narrow sense, negotiation on the one hand, the concrete operations executed by the hands on the other. In all this the logic of manual operations in which an implement is involved, is the defining pattern and always present. This goes against the silent and commonly shared opinion that the human from out a sphere of free floating freedom as a neutral frame of reference decides on what action to take. But as made clear this area is not neutral at all. Basically there is the primary motivation determining the very first meaning of what is happening from which mediated negotiation is geared up. So there is already meaning and a particular mode of operation as the very first basis.

Secondly a recalibration of the visual activity is taking place in particular the way the immediate environment is getting organized into a meaningful scene. Driven by the primary motivation the eye increasingly is becoming focussed on the perception of features with the character related to manipulation such as form, handiness, efficacy and the like.

All these elements contribute to an increasing specialisation of the negotiation of the Umwelt even a moment of radical difference. However taking the contemporary abilities of the human into account the conclusion remains that this – despite the mentioned difference - does not suffice to obtain the level of cognitive capabilities the actual human demonstrates.

Stage four: taking off to another level altogether

The intertwinement of hand and eye resulted in a reconfiguration of the input provided by the environment. The meaning of the action supporting implement was bound to the use of it in an overall scheme of primary motivation. Here meaning is direct. The meaning of a hammer stone is crushing coverings making the nutritious content available.

Incidentally it might also have been used in killing a predator. This event enrobes the tool with a second meaning. The fact that a tool no longer is embedded in incorporation but appreciated as clearly demarcated and isolated from other specimen equally discernable, provides the readiness required to serve as a stimulus of second order. As such all is in place for the presentation of a tool having killed an enemy to provoke in the experience of a witness of the original scene, a reminiscence of that dreadful event. The tool acquired the function of a substituting stimulus.

Two issues are of importance.

First of all, that by manipulation of some entity one becomes able to provoke an experience. The type of experience is not special as there is a lot around that is meaningful and by this provoking experience. It becomes spectacular by the fact that the action is self initiated. Once experienced as a possibility then it acquires the character of an unexpected reward which in turn requires repetition and reaffirmation. Observe that reflection is not required. It is a process which could be described in behaviourist terms, operations driven by rewards. But of more importance is that it fires up a tendency today coined as intention. This is a new condition whereby experiences are not exclusively fired up by external factors, but also can be brought to life by a self intended action. In combination with the content of the effect, that is making reference to something which is not actually present, it frees from being bound to the situation locally at hand. Displacement in space and time – always in the realm of experience – becomes an

accessible practice⁸⁹. It will in the end lead into the ability to build models and plan future actions in the imagination⁹⁰.

There is more.

The process of objectification, hand and eye discerning particular patterns, implies already a taking of distance. One has to step back to better see what is in front of him (con-fronting him) in order to improve the form of what will become the tool. Add the ability to bring forth imaginative content of something or event not actual present by this transcending the condition of being bound. The initiator enters the experience of being disconnected. He is no longer instantiating the centre of the event, he becomes decentred, excentric as Plessner calls it. He finds himself positioned on the sideline. He becomes a perpetual observer. It even takes a bizarre form when in imagination fired up by making use of external cues, he provokes an image of himself or of a feature of himself or of an event in which he got involved. At this point reflection understood as considering upon, becomes reflexion or considering upon oneself. It is bizarre indeed because the organism manifestly being one and in principle undividable seems to break up in an active observer and a passive observed installing a feeling of distance which actually is not present. It is a certain perspective, an appreciation which Sartre strikingly coins as “cette distance nulle”, the distance which is (getting experienced but) not actually occurring.

The ability to realize a displacement in time and space, if only in imagination opens a plethora of new applications, a complete new order of interventions onto the world which on top of that suddenly increased in scale in an exponential way.

At this point the human species realizes types of negotiation leaving all other species far behind.

Summarizing

1. At first the behaviour of the hominin line which is of interest in this discussion provides no indication yet of a cognitive condition differing from other species.
2. Taking an erect posture and a bipedal gait provides the onset for a new perspective on the environment. It frees the hands from a supporting function in the locomotion and by this opens the ability to improve skills already present. But again this second stage does not show a qualitative rupture⁹¹.
3. In the third phase a circular dynamic of hand and eye results in a reinterpretation of the environment. A shift occurs from a purely primary motivated perception in the direction of an increasing attention for action supporting implements in first instance in the form of particular

⁸⁹ This has been discussed broadly in other texts such as in “The Forgotten Transition” (2018)

⁹⁰ For this subject Lakoff and Johnson, different publications on the use of metaphor and projection in general.

⁹¹ For some detail, Shumaker et al. (2011) point out that chimpanzees and bonobos do not introduce tools to make tools, they do not make tools in a cooperative setting, they do not bring forth complex tools and the power is provided by the energy of the animal and by the mass of the implement.

and concrete instruments, later a reinterpretation of everything perceivable in function of manipulation and in the end as a general perceptive cognitive pattern or a concept which is getting imposed. At this point a clear difference becomes apparent and this provides the first moment in which a radical change shows.

4. Association provides the instrument with a secondary meaning. It opens for the actor the ability to initiate and apply to himself experiences with a content of imaginative nature. Manipulation of the implement results into manipulation of the mentioned content. With this the capabilities of the species take a step of exponential magnitude. The cognitive abilities of the species most akin are left behind in a definite way.

This might introduce the idea of a world fully transparent and open for all possible interventions. However all this is unavoidably based on the scheme of action in which tangible means are involved.

Reducing the previous to the core of what rightfully might be considered the revolution:

1. The introduction of the object as perceptive cognitive concept rising from and always embedded in the context of mediated manipulation.
2. Given the circumstances inevitably it had to be followed by the ability to initiate displacement in the imagination opening the floodgates to new possibilities and a new be it imaginative realm of experience.

Remarkably the human experiences a gap, an abyss even in relation to other organisms. However, biologically man is not radically different from the last common ancestors. Leaky's quote that man is the fifth ape – doing things differently might be taken literally.

Rounding up, the article discussed refers to a grammar of action to be understood as a series of discrete operations when stone knapping but it also promised to relate this to general intelligence, in short a bottom-up approach. It did not meet that end.

The alternative presented addressed the problem the other way around. The attention got focussed on a larger level incorporating the fashioning of nodules into stone tools without an analysis of the operations in detail, a top down approach.⁹²

⁹² In accordance to academic practice, I could have added footnotes in abundance. I preferred not to do so and only to introduce a note when it enriched the information offered.

8. Knowing the hypothetical initial condition

Introduction **komt uit het boek, nalezen en aanpassen**

In part II, sub 1.1.1., two types of worlds got mentioned. The “first” referring to the hypothetical initial condition is of major importance⁹³. It is a subject worth studying in its own right. But still more important for the actual presentation, the characteristics and skills of the modern human species can only be well understood against precisely this supposed initial condition.

It is the condition we have in common with animals which are biologically close to our species. At least, this is what Darwin’s approach suggests.⁹⁴ On this assumption biology will conclude that form and function of the organism in the end will be a selection arisen under the pressure of the environmental conditions of the moment. Cognitive biology will deploy a similar argument however restricted to cognitive processes and abilities. But instead of focussing on the mechanism of selection as in biology, a different perspective is also possible. Darwin’s theory implies that the very moment the hominid which would become human in the end, choose his own path of development, he would have organized input perceptively and cognitively similar to his closest relatives being the chimpanzee and the bonobo. This agreement provides the fertile soil from which the typical human abilities have been sprouting.

But how could we, being only able to perceive and understand in the way modern humans do, tell something sensible about a condition we no longer partake? Obviously a first hand report in the sense Nagel meant when formulating “what is it like to be a bat?” is out of reach.

⁹³ Cfr. Stated in the conclusion of an article by Penn, Holyoak and Povinelli dealing with the functional discontinuity between man and (other) animals. These authors formulate the following lamentation: “In our view, the entire field of cognitive science (...) would benefit if more effort were focussed on constructing biologically plausible, behaviourally accurate, computationally feasible models of the cognitive abilities of honeybees, corvids and chimpanzees, in addition to the cognitive abilities of the enculturated, language wielding humans” (2008:129).

Some similar idea of an initial condition can also be found in Piaget’s “Child’s conception of reality and causality”, in particular section IV (1930:237-305) According to the text the young child’s realistic way of experiencing the world or rather his own existence does not have to be learned. On the other hand features characterizing the experience of the modern human are the product of imposed development in a social context. In this sense this primary condition seems not be different to that of animal species most akin to man. For instance, **feral children** never been in contact with civilized humans **do not show** characteristics of **objectification or decentering**. All this in accordance with the remark of Richard Leaky that man is actually the fifth ape and thus initially sharing the same cognitive conditions.

Observe that Kant and Leibniz state that the very young child does not possess what they call the tools of understanding – referring to the basic schemes of causality, time, space etc. So here also there is absence of the features characterizing a person provided with the capacities of reason. But, in their view these are genetically programmed and do not need experience to come into development.

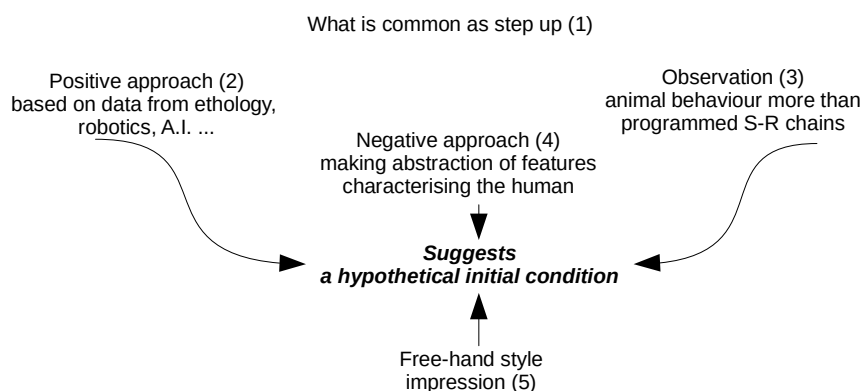
⁹⁴ Cfr. Tod Preuss in Gazzaniga (2000:1231) referring to this continuity in the conclusion of his contribution “Despite this, adherence to the doctrine of continuity and belief in the basic uniformity of cortical organization have led neuroscientists generally to stress the importance of features of brain organization that are shared widely among species, and to downplay the importance of species differences and the kind of research that is necessary to identify them.” An earlier footnote by Coolidge & Wynn is also of relevance here. “These early hominines shared a cognitive phenotype that was indistinguishable in its major components from that of gorillas, chimpanzees and bonobos. These bipedal apes occupied the same cognitive grade as their knuckle-walking cousins.” (2009:106) and also “There is no reason to invoke advanced planning abilities, or even foresight (...) beyond the range of modern apes performing hierarchically organized manual tasks.” (ibid.:98)

However we are not completely ignorant. There are pathways allowing a glimpse on the mentioned condition⁹⁵.

The strategy which will be suggested consists of four interlocking positions.

- (1) What are the implications of being a species among other species?
- (2) Based on observations of animals in the wild, observations of animal behaviour under controlled conditions, on data rising from problems in constructing robots and the development of artificial intelligence, a picture emerges, be it slightly more than a suggestion about the way animals akin to the human species have a world. Ideas about embodiment, situated and grounded cognition, proposals such as enaction, concepts borrowed from Gestalpsychology and constructivism, stressing action based negotiation rather than focussing on the ideal of knowledge... all these can add to the picture mentioned. An approach such as this will be called positive because elements are introduced in a constructive way.
- (3) As a comment added to (2) there is evidence that the intelligence of animals reaches beyond the behaviour of an automaton.
- (4) Apart of a positive, there also is a negative approach within reach. There is abundant knowledge about the features characterizing the modern human species. The suggestion is to bracket precisely these features, thus rendering an idea of what it is to be in the world without these capacities.
- (5) The previous steps are to the extent possible underpinned by existing literature. This last step bears the character of a free hand approach resulting in a rather impressionist depiction.

As a scheme:



⁹⁵ Cfr. with Gärdenfors (2006:16) making suggestions such as: 1) observation of different animal species, taking into account what is already known about their respective phylogenetic development; 2) the study of the brain as set of different layers with the eldest or most primitive at the centre while the most recent developments are situated at the outside; 3) the recapitulation theory suggesting/exposing developmental steps and 4) data from archaeological finds and from anthropological studies.

For an informative overview on comparative research of the development of animal and human cognition, reference is made to MacLean et al. (2011). Their rationale agrees with the proposed approach "(...) if we understand how cognition evolves in nonhumans, this may in turn inform our understanding of how our own species' cognitive abilities have evolved."

Discussion

1. Common ground

In first instance we have a common ground.

Humans are after all a species amongst others, biologically only gradually different in some aspects. This thesis is no longer contested apart from the point of view of explicit and implicit creationists. The former adhere priority to revelation while the latter are convinced that there must be “more to it (all)”.

Humans belong to the chordate meaning that like many other species there is a single dorsal nerve chord present. Humans are mammals and further down on the evolutionary tree members of the large family of the primates. This includes stereoscopic vision and an opposable thumb allowing fine grip. Primates in most cases have quite large brains compared to other animals. And still a step further down the human species diverged from the chimpanzees as the closest relatives only seven to five million years ago, quite recent in the overall perspective of the evolution of life.

So humans share the body plan and the physiology with a lot of other animals. But the similarity does not end there. It reaches into the field of the psychological functioning. One does not have to look all that far in order to find evidence. The results of psychological research into the primary human behaviour taking scent, taste and colour into account and appreciating the importance of movement are translated into sales strategies used in supermarkets. These do not appeal to the higher intellectual capabilities but into more animal like characteristics. Or take the seduction strategies between sexual partners or even broader the nonverbal showdown amongst rivals. The whole area in which relations are getting regulated on the most basic of levels is easily understood as a type of behaviour propagated in the animal world.

But in an even more general frame of reference there are fundamental dynamics that are shared between animals and humans alike.

Take the core dynamic of all living creatures: the propensity for self sustenance in the perspective of procreation coming down to the transference of genes.

The elements mentioned offer no more than a rough outline. But they show a profound commonality with some animals, primates in particular.

So far for a first glance on the way, at least some animals are in the world.

In general this does not get a lot of attention. There is a tendency to focus on the differences, regrettably neglecting what is in common.

A warning is appropriate.

In the aspiration of understanding animal comportment one should beware for the temptation of anthropomorphism. This not only installs a false image of the way the animal experiences the world. More important for the actual project, it undermines the pathway to an accurate insight since it seduces to compare features specific to humans with humanlike characteristics attributed to animals.

2. A multidisciplinary approach

The second step in sketching what the initial condition could have been like is based on research in ethology, paleoanthropology, archaeology, robotics, artificial intelligence and suggestions stemming from psychological and philosophical models.

Two versions will be offered. The idea behind this is that it is quite unusual to say the least to imagine the initial condition and more than one narrative offered might help to fill in the picture suggested.

Version 1

Each and every species has a specific way of perceiving the environment it finds itself in. Perception is developing in the tension between the particular conditions of the primary motivation at a very moment and what is happening in the environment. More specific, the “image” taking form is in first instance a function of the embodiment of the species in question meaning, what it is able to perceive in respect to its bodily capacities. In second instance this image also is a function of the actual condition of the organism, being hungry for instance. Last but not least it is a function of what is happening in the environment which could answer the previously mentioned condition. So the experienced perception emerges at the intersection of embodiment, the primary motivation and the state of the surrounding chaos. Therein a figure takes form which could be understood as “the relevant phenomenon”.

The question is how a phenomenon like this could be characterized?

The difference between “seeing” and “looking at” might be of help. It is what pre-Socratics distinguished between “noein” and “blepein”. Seeing is a rather passive mode. It comes down to what the senses experience under the bombardment of the exterior forces. “Looking at” on the contrary is a more active way of focussing.

Different aspects are of relevance here. From a physiological angle, if the influx of stimuli results in patterns which remain stable over time, the level of attentiveness goes down. This will only be aroused as soon as the mentioned patterns gain a dynamical pulse, when in other words there is movement. From the angle of relation regulation⁹⁶ the perceiving organism shows a sensibility for predators and for prey. Both have an important characteristic in common: they move.

It results in rapprochement in case of food or taking distance if there might be a threat. On the other hand many organisms tend to freeze in sight of danger. They keep still, play for death in order to avoid being observed. Predators which normally do not scavenge avoid immobile corpses preferring live prey which in itself is a sign of health.

Movement is the keyword. Taken more broadly this may be rephrased as “event”. Gestalt psychology with its characteristic stress on dynamical qualities is more appropriate to describe situations like this, rather than a mechanical sequence of stimuli and responses.

In Gestalt what moves takes the foreground. It becomes a “figure” while what is of less relevance disappears into the vagueness of the background. This dynamic field wherein events obtaining foreground value has to be considered as a unity, a melting of organism and field. This has affinity with the way a very young child experiences the world.⁹⁷ It has not yet learned to discern itself from the outer world, the latter perceived on a distance “over there” in front of the child, itself as an instance very different to that world. In the experience, child and world collapse into one.⁹⁸ The idea brought under the attention is in the first instance that other non human animals partake in a same type of experience.

⁹⁶ The very low level tension between organisms seeking to find dominance or balance.

⁹⁷ Cfr. Kellman on Wertheimer’s “gemeinsammens Schicksals” **BIB en specificeren**

⁹⁸ J.J. Gibson observes that “The words ‘animal’ and ‘environment’ make an inseparable pair. Each term implies the other. No animal could exist without an environment surrounding it. In the same sense, though not that obvious an environment implies an animal (or at least an organism) to be surrounded” (1986). We are dealing with the experience of having a world. Gibson on the other hand talks about form and function of (parts of) the organism. But the unity of the organism with its Umwelt agrees with the general idea. This very idea appeals to another quote which might only superficially be related to the actual discussion. According to W.D. Hamlyn, Theophrastus in *De Sensu* refers to Empedocles who does not make distinction between sensation (the physiological processing of input), perception (being the interpretation of the aforementioned input) and the act of thinking. So apparently for these people the three elements would have been experienced as one single fact or movement. According to Hamlyn the discrimination between sensation, perception and thought as three different domains became introduced in the period of Aristotle (1961). The suggestion implied is that the act analysing into different parts is a particular perspective introduced at a certain moment in history.

Secondly it is also of interest to observe that this type of world is not the type populated by sharply distinguishable objects.

Version 2

As soon as an animal opens the senses it experiences a – world as a – dynamic fluctuating field. If the geometry of a field like this would be projected on a sheet, the form and volume would be defined by the scope of the abilities of the sense organs. It would immediately become clear that this projection is not circular. Take the visual dimension for instance. For a predator with the eyes oriented forward the visual world would take the form of a triangular lobe. In the case of a grazer, the prototype of an animal of prey, the eyes sideways oriented would cover a region of about 300°. The same goes for the other sense organs. They all render a particular field of perception. All these volumes merged result in what von Uexküll calls the Umwelt. But of equal importance the motor capabilities add their own volume of action. Both give existence to a particular life world.

This world is however not neutral neither static. It is in a constant flux. There is movement. If the fluctuations are getting perceived depends on the abilities of the sense organs of the organism in question. What not can be grasped is not part of that world. On top of that the pressure of the primary motives is of decisive importance. Being hungry will give rise to a particular sensitivity for stimuli or fluctuations which can fulfil this demanding need. If on the other hand the animal is not hungry, food which is even within reach, will be left aside as if it did not exist. The primary motives will motivate (!) the animal to move. More still, they will take away the neutrality of the Umwelt and provide it with meaning.

So far, a picture has been drawn of a dynamic field characterized by a certain form. This form is related to the capacities of the sense organs. Fluctuations appear in the field and obtain the status of event only in relation to the condition of the primary motivation present at that very moment. This attracts the event into the focus of attention, gaining salience in perception, not sharply delineated but rather like a form rising up under a veil which gradually flows into the surroundings. Gestalt psychology would call this “becoming figure”. The background merely gets any attention.

This description already reveals what is of importance. The primary motivation feeding a particular sensitivity seems to be the necessary condition. This type of sensitivity being absent, everything becomes dull, in a way synonymous with background. This sensitivity is characterized by a kind of openness for a particular event. Something in the field has to move in order to attract the attention of the organism. Therefore movement is a decisive criterion.

To appreciate this to more fully, it can help to draw the attention to the fact that the modern human to a considerable degree is oriented to features with a more static character. This does not exclude the importance of movement. As mentioned before, publicity in supermarkets precisely takes advantage of this. Any type of movement, figures changing position or light changing in intensity or colour, it all seems to exert an attraction which cannot be resisted. It hooks into elder systems shared with animals. But for the negotiation of the world, modern man is looking for – remember “blepein” – more formal features with a static character. For man, the world in first instance is full of entities susceptible to manipulation. He not only refers to *the* chair as a concrete object, but also speaks of *the* goodness and of *the* inch as if these too would be concrete and as such inviting to be manipulated.

It goes with yet another characteristic, being bound to the local and the current, in short the “here and now”. The experience is enclosed in the situation of the moment and exclusively at that particular spot. There is no anticipation looking ahead into the future. Existence is strictly bound into the immediate.

What appears to be anticipation like the annual migration or the recovering of previously stored nuts by squirrels, this has no comparison at all with a planned looking ahead realized by man, it is of a different order altogether. Behaviour like the annual migration can be attributed to genetic programming probably in combination with some form of situated cognition.

The elements mentioned so far allow a summarizing sketch. The organism experiences its existence as a unity, an indivisum taking the form of a dynamic field in which turbulences take place. Some of them gain figure value or become events in relation to the condition of the primary motives. That type of experienced existence is enclosed in the local conditions of that very moment.⁹⁹

Two further elements complement this picture.

The modern human shaped by culture is able to think back about situations from the past happened on other locations. With the same ease he is able to render representations about actions he would like to undertake in the future. He can so to speak in his imagination displace himself in space and time.

This is not exceptional. This type of experience overcomes animals too, in any case those provided with a central nerve system. The scent of a predator can give rise to a vivid excitement in an animal of prey without even perceiving this predator in the flesh, without even the predator being really present at all. This type of imagination is familiar to man too. Think of burning incense reminding of church or of cakes reviving Christmas scenes. So an animal is not devoid of some form of imagination. This observation supports what will be explained when Moravec will be mentioned further in the text. The experience animals undergo is richer than that of an automated stimulus response chain.

But there is a difference of decisive importance which already became clear in the examples given. The animal *undergoes* imagination. Cued by an external event it is taken through it. Man on the other hand is able to initiate imagination voluntarily, by his own hand, by some action he executes.

The second element is related to the act of thinking; however this term is used here with reluctance. Because "thinking" is a concept referring to a selection of processes being themselves part or rather aspects of a global and integrated action. Referring to "thinking" already implies a form of anthropomorphizing, in particular a certain cultural perspective. But even with this critical remark in the background, there is a clear difference between man and the non human animal. In the act of thinking of both, association plays a central role. In the animal it is related to content of episodic nature. This refers to events which in the life history have been experienced earlier. But in the associative relations man organizes, semantic content such as definitions of the type found in dictionaries is central, maybe even of most importance. On top of that the structure man applies is not only that of heuristics and automated procedures, but takes the form of systemized series as in logic and rhetoric. The procedures executed by animals are supported by instinct or are consolidated through events with a recurrent character. They also occur in humans but are complemented with model construction of imaginative nature and with scenarios or narratives rendered by the same type of imaginative effort.

So far for an attempt to sketch the way a non human animal might experience its existence in the world or at least an effort to indicate some important differences with the way humans do.

Besides in one particular instance, none of the ideas proposed is original. The primary motives giving each and every organism direction and intensity can be read in the concluding paragraph of Darwin's 'Origin of species'. The idea of a relation regulatory tension is borrowed from "The pragmatic aspects of human communication", a book by Watzlawick, Beavin and Jackson. A "dynamic fluctuating field" is a combination of "die Umwelt" by von Uexküll and the dynamic arranging of elements by von Ehrenfels. The stress on the experience bearing the character of unity goes with the principle that the experience of the whole is fundamentally different to the sum of the constitutive parts as formulated by Wertheimer.

⁹⁹ For more characteristics of the hypothetical initial condition, see XIV.2.1.

The perceived environment taking the form of a multi dimensional volume has affinity the work of R. Cytowic on synaesthesia. What is relevant in that field and determines perception can be attributed to Koffka while the concept of “figure” was introduced by Rubin. Koffka and Rubin both were assistants of Wertheimer. A fluctuation gaining relevance as a function of the primary motives can be related to the idea of a structural coupling as formulated in the joined efforts of Varela and Maturana. A dynamic world full of events has already been mentioned by Northrop Whitehead. Ostrovsky illustrates the importance of movement as a discriminating criterion. This in turn is getting supported by data raised by blind people who recovered visual capacities after a surgical procedure (Gregory and Wallace; also Fine; Huber; Held; Molyneux (Degenaar...) **BIB/Years**). Recognition of static features not being native has been argued by W.D. Hamlyn while C. Moore adds that this competence has to be learned in the same way language has to be acquired¹⁰⁰. Being bound to the “here and now” is getting expressed in what is known as the Bishof-Kohler hypothesis and is also pointed out by Povinelli. It agrees with observations made by Suddendorf and Busby about the gradual development in young children of the ability to anticipate. The positive valorisation of heuristics in the solving of problems is discussed by Kahneman and also by Gigerenzer however both take another perspective. The act of reactivation and subsequent revival of memories is by Edelman strikingly called “remembered presents”, while Damasio speaks of “projective memories”. Gärdenfors names the imaginative displacement cued by external factors “cued representations”.

Stressing the difference between heteronymous and autonomous cueing of displacement is actually the only insight for which no reference could be found while precisely this feature may be considered to be of pivotal importance in the development of modern man.

3. The power of implicit heuristics

The third perspective goes against the Cartesian conviction that the human is an extraordinary creature provided with a nature completely different to animals. In his appreciation animals do not reach much further than that of a mechanic driven automaton.¹⁰¹ This idea, since long considered naïve, is countered from a rather unexpected discipline. One would in first instance think of psychology as a source of criticism. But it is getting disapproved by data emerging from the field of artificial intelligence and the development of robotics in which high sophisticated digital models and techniques are getting applied. The paradox of Moravec offers a striking illustration. It is considered a paradox because the findings go against the general opinion assuming that higher intellectual capacities necessarily require quite sophisticated processes. But according to Moravec this is not the case. The most difficult steps in constructing robots, is actually the implementation of low level processes and skills. The so called difficult processes seem “relatively” simple to reproduce.

Shettleworth formulates an insight supporting this. As an evolutionary biologist she observed that the scope of problem solving by means of heuristics seems to be capable to tackle quite complicated situations.¹⁰²

¹⁰⁰ Reference has already been made to the work of Mendes pointing out that children younger than one year fall back on spatio-temporal features. Little by little older children pay more attention to features of the objects themselves and the category of objects the item is a member of. (Mendes, 2008)

¹⁰¹ See for instance Donald stating that animals cannot think and are creatures of conditioning reacting to the present or the immediate past. For a more balanced discussion, see John Cottingham (1978).

¹⁰² The following cases offer some illustrations. Dr. Alice Auersperg at the Department of cognitive biology of the University of Vienna has a cockatoo which is able to open a complex lock requiring five steps to be executed in a defined order. The example of the orang utan getting a nut, which is at the bottom of a glass tube, by spitting in water so the nut starts floating up in the direction of the mouth of the animal (dr. Joseph Call, Max Planck institute, Leipzig).

Insights like these refute the image of an animal as a dumb brute only being able to execute stimulus response chains in a rather mechanic way. They might not be provided with the higher cognitive capacities humans testify of; their cognition is never the less quite rich in its own right.

4. Features setting man apart

Speaking of the higher cognitive capacities humans testify of, this is exactly the subject to be discussed now and referred to as the fourth element in the scheme presented earlier.

There is abundant literature on the features setting man apart from the other species however each author proposes his own favourite¹⁰³. But this is of no importance to the actual discussion. It has to be stressed that this subject in its own right deserves a full treatment¹⁰⁴ what can not be achieved in scope of these pages. But it is possible to offer some hints, may be point out even the most remarkable features. The rationale is that precisely leaving out these exceptional competences could contribute in understanding the way non human animals have a world, a position man once shared with the species most akin.

Calling the fact that man is the only organism using tools and symbols to negotiate the world, is one of the most remarkable characteristics will not give rise to much controversy.

Some animals apply tools too, but these are used in an incorporated fashion. As such they are an extension of the bodily dynamics. More over the instruments in question are quite primitive and exclusively dedicated to one single task. As far as the term development can be used rightfully here, it is in no sense comparable to the sophistication and complexity of the tools used by the human species. The multifunctional way humans make use of their tools is not even taken into account.

In the context of human way of life it seems that tools, instruments, means in the most general sense, form a distinct field of development, a field positioning itself between the human and the world.

Take linguistic signs as prototypical example. They are there present as a set, at hand inviting to be manipulated. Making use of it opens the ability to negotiate the world in an intrusive way, following the path of analysis or of synthesis. This leads into an imaginative expansion of the phenomenal field. As an implication, the human is no longer bound to the physical environment. Using imagination he expands the world he experiences. Signs used as instruments allow to think and also to communicate with conspecifics about what is out of sight, about what happened in the past.

This skill reaches its pinnacle in that particular case a human takes himself as an object of observation and comment.

Here an organism, a species among other species appears, able to consider himself without any apparent effort. More broadly taken the whole world, man included, has become object of mediated manipulation.

This is the way man gives rise to a world he seems to appreciate as reality.

Primates proved to be able to recognize faster than humans ever could, fifteen different numbers in a certain order (Dr. Tetsuro Matsuzawa, Institute for the study of primates, Kyoto). I have to admit not being all too happy with Heidegger's statement that "der Stein ist weltlos, das Tier ist weltarm, der Mensch ist weltbildend". What hinders is that an animal is qualified as being "poor in worlds" in contrast to man being able to imagining worlds. He means it correct – an animal cannot initiate an imagined world - but that is not imply that an animal's world is poor. (Die Grundbegriffe der Metaphysik, Freiburger Vorlesung 1929/30; Klosterman 1983:261.) The scope of what animals can access and reach in the appreciation of the behaviour of others is nicely shown by Call & Tomasello (2008) concluding that apes can predict actions of others on the basis of past experience (the reach) but they do not go beneath the surface to an understanding of the goals, perceptions, knowledge and beliefs that guide action. Call, J. & Tomasello, M. Does the chimpanzee have a theory of mind? 30 years later. *Trends in cognitive sciences* 12(5), 187-192.

¹⁰³ Also discussed in the chapter "The difference making the difference", in particular XIV.1.5.

¹⁰⁴ W. Stockzkowski (2002) offers a splendid overview.

In this type of reality construction language as a technical interference plays a major role. Take image schemes for example. It are quite simple structures continuously present in daily life. "Finding oneself *in* a room" pictures a container. This in turn can be projected on non physical situations as in "finding oneself *in* difficulties". It will be clear that the latter sentence has not to be taken literally. It is a trope. Something similar can be found in the use of metonymy. "There is a Rembrandt on the wall". Again the man himself is not hanging on the wall, but one of his paintings. This type of expressions is abundant in colloquial language. Take "an animal giving birth...". In fact an animal is not giving anything in the sense of handing over an object for the receiver to keep. But "the process of birth" has been objectified here and as such it became something susceptible to be handed over. Or "time is running out and time flows...". In so far time would exist in a material form, it does certainly not have legs allowing it to run, neither has it the qualities of a liquid allowing it to flow.

So far for a few illustrations of the way being bound to the here and now becomes transcended and the phenomenal is getting expanded making use of imaginative techniques.

Summarized: the human is able to expand his experienced world in an exponential way and on top of that make himself part of that very experience. This allows considering that world and his position into it as if it concerned something spread out in front of him.

These are some of the qualities characterizing man and setting him apart of the way animals experience their world.

The suggestion is to put precisely these qualities aside – what earlier got called the negative approach. This way the human peculiarity would evaporate and give rise to an approximate picture of a pre-modern human experience or the hypothetical initial condition.

5. An impressionist depiction

In the previous contributions knowledge gained by experiments and framed in theoretical points of view was central. It is now time to offer a rather more impressionist depiction in which empathy and imagination play a role.

For a start, imagine there is no language faculty, no occurrence to speak¹⁰⁵. This immediately brings forth far reaching consequences. The ability to speak being absent, no verbal thoughts can take form neither. This is no small omission. Realize what an experience would be without the presence of a verbalization of some sort. At once silence the unrelenting endless yapping voice in the head would be silenced. No endless consideration, no endless judgment, no never ending stream of comment, no lamenting about bad weather conditions, no admiration for a fabulous sunset. No verbal cueing of events happened in the past, no planning about enterprises to be undertaken in the future.

The world molded and organized by language is gone.

Remaining is a kind of silence, not in an absolute sense but an absence of words, descriptions, judgements and scenarios. In place comes an existence in its full glory, nothing else. Consider a cat on a windowsill. It sits. It instantiates nothing else than being seated. It is taken by the demands of the moment.

However it might seem a paradox trying to depict with words what it is to be without words,. the previous lines offer a hint in that direction allowing to go yet another step further.

We now will not only leave words behind but also means. While the use of these exactly characterizes the human condition. There is hardly anything mentionable in which means are not involved. Take language discussed in the previous lines. It allows man to transfer information. Indeed animals do not speak but do

¹⁰⁵ Compare to "Einklammern" as suggested by Husserl, putting aside as a methodological intervention **BIB**

they not communicate too? Bertrand Russell observed that however his dog was an intelligent animal, it never shared information about the kindness of its parents. Meaning that some declarative content is missing. The human linguistic mode of expression is apart of some emotive exclamation all about declaration. But this can only be executed thanks to the manipulation of means in that particular case called words. The use of words fills the human existence, but this is even more the case for the employment of means. They are used to protect the human from the whims of the weather, to provide food, to hunt and fish, to farm, to transport. Means are always involved. They are really the difference making a difference. It is however the purpose of this exercise to also put means between brackets, to imagine them not being existent. Einklammeren, putting aside for a while as Husserl meant. A world without language already seemed a land slide. A world without instruments has more of a seismic shift. It reduces operations onto the environment to direct actions of the body. No club to kill, no knife to cut, no wheel to transport with, let alone a smart phone or a computer. Only what the capabilities of the body allow are within reach. The dynamic body in a direct relation to other dynamic bodies, with the environment, with the Umwelt is what existence characterizes. A mere being not in the sense of pure but rather of brute, raw, in no sense mediated. An existence devoid of verbalization implies no object of reflection.

There is yet another step imaginable. The means mentioned are strictly taken objects. The denotation "object" is an idealized and generalized concept of what started as a particular and concrete utility which over a great span of time by endless repetition raised a general pattern.

At first there was the one concrete nodule of flint supporting a particular type of manipulation which could have been the breaking of the shell of a nut, the bolster of a fruit or a bone to expose the marrow. The benefit experienced directed focus hand and eye in reaching out for more of what could be affordant for similar enterprises. Slowly the characteristics of forms which proved to be optimal in that respect constituted a template, a scheme, an idealized form. It was no longer all about this one particular nodule in a specific action but it overarched all forms suitable for the task. Much later when language had come in place, this would be called an object. The concept existed long before the name came up.¹⁰⁶

The scope of the window of time has to be taken in consideration. It is of utmost importance. The transition whereby a dynamic Gestalt figure got framed into a stable structure did not happen from one day to another. It took most probably an enormous span of time. Only between the findings in Lomekwi and those in Oldowan gorge there is already one million years and then to Acheul another million. It is necessary to be fully aware of this fact.

So in first instance some concrete manipulation on an implement very gradually took the form of a stable template which in a later stadium would become generalized into a means applicable over many different situations. At the core is a concrete implement, a means supporting manipulation. But if means can be abstracted, removed from live as suggested in the second stage as mentioned earlier then the formation of an object as a perceptive cognitive scheme would never have had to occasion to take form. For experience the consequences are profound. Because objectification is the necessary condition for the experience of a world presenting itself as something over-there, in front of us. An object is needed to be able to imagine something which can be commented on, which can provoke a declaration, which is present there to reflect upon, in the end to reflect upon oneself. If that some-thing does not exist then a setting in which an observer reflects upon what is present over there as if it was an object whatever the nature of it¹⁰⁷, might no

¹⁰⁶ Consider Goethe "Den ebenn who begriffe fehlen da stelt zu rechten Zeit ein Wort sich ein. Think also of the meaning in Latin: ob-jectum, that what is being thrown in front of. As a matter of fact this particular meaning came around the 17th century. Before that period what now is considered an object would have been called the subject, that what is thrown under us.

¹⁰⁷ Take for instance something dynamic as partying. It needs to be transformed to "the" party in order to be invited into it. Or take the cooperative act of hunting, it could not be planned and organized if it was not prepared or thought

be possible at all. There would not be a god's eye perspective or the position of Archimedes, considering that exactly these seem our natural perspective.

With all this falling out of reach there would be nothing – no-thing – there to confront with, there would be no act of self initiated imagination, no representation, no making present anew. Resulting from this, not as a leftover but as the full scope of existence is a centric and fully engaged perspective, an entwinement, a coinciding with what from a declarative perspective would be called the world (out there). Actually world and organism would be experienced as one. The organism would find itself in the condition Wertheimer called “*Gemeinsammens Schicksals*”, a common fate, a unified fate.

These reductions of language, means and object result in an experience whereby the primary motivated dynamic conflates with what can be perceived and grasped as defined by the abilities of the body of the organism. This condition is easily called egocentric. However the term might be the right one, it should not be understood as an I-center conscious of itself, but as a unity encompassing all experience.

So far for an effort to depict what it must like to be to find oneself in the condition labelled as the first world. “What is it like to be a bat?” Nagel asks in his famous article first published in 1974. He suggests that there is no answer to that question. Anyway no answer formulated from within a condition of a reflective consciousness. An answer sounding as “it is *xyz* to be a bat”. But the question itself is without sense, “ohne Sinn” as Frege would say. A bat does not take the stance of reflection. A bat only does what it is good in: being a bat. Without language, being in the world without means, primary motivated bat and world all in one. That is exactly the first world or the hypothetical initial condition.

Rounding up

The combined approach offers a glimpse on the way non human animals might experience existence. The motivating insight was that man once was a species among all other species. That man in that position must have shared a common life world. This principle at least implicitly present in Darwin's writings offers the stepping stone to sketch out what could be called a hypothetical initial condition.

The first element is about the organism experiencing himself and his environment as being one. The introduction of the primary motives giving direction and feeding the intensity, provide dynamic tension. Movement plays a central role.

From a very different angle, observations in the field of artificial intelligence and robotics, suggest that an organism in this condition is capable to far more than merely the execution of stimulus response chains. An approach as offered so far can be called positive as it refers to constructive elements. But there is also another pathway, which appropriately could be called negative. Because the aim is to omit all these competences and skills in which the human not only excels but undeniably sets him apart of all the other animals however close some of them once might have been.

This strategy in registering what is known, leaving aside what makes different, stressing the abilities of non human competences suggests an image of a hypothetical initial condition. It might be hypothetical it none the less is not completely without ground.

This then becomes the platform onto which under the pressure of the conditions of that time and place, new abilities, I would rather speak of skills, would have come into development.

Skills indeed, because the preferred basic methodological perspective focuses not on innate capacities but on the way an organism found particular ways to negotiate its niche under change. Negotiation, needless to say, has to do with handling, manipulation, action.

of as “the” hunt. It is not the case that declaration needs some event to be objectified, in reverse declaration follows from objectification, it would not be possible at all without it.

9. Six levels of meaning

This is actually an extract of the chapter on the role of the hand in bringing forth cognition. Because of the importance it is also offered of a short separate contribution.

In the Western tradition meaning seems to be something in the open which has to be acquired; it has to be learned in the course of education. As has been made clear earlier the interpretation defended here is that meaning is an intrinsic feature of being alive, as such it can even be taken synonymous to being alive. For the living creature, any living organism for that matter, the meaningful figure is obtaining its phenomenal form on the edge of the chaos present on the one hand selected out by the primary motives and the abilities the bodily infrastructure the organism has on the other. In that sense the world as meaningful appearance will be different for the ant compared to that of the hominin.

In short life equals meaning. A living organism is full of meaning from the very first moment.

Two levels can already be pointed out.

In **the first** instance meaning is what is relevant in relation to the primary motives, the latter coming down to sustaining life and procreation.

The second level is intertwined with this. It is determined by the type and construction of the body. The cow is as any other organism motivated to stay alive. But the way it is getting around is determined by the construction of the body, its orientation and the abilities opened by the particular and species defined body plan. Man is no exception. Remarkable detail: however the hominin is akin to other ape species there are signs that the former started walking on the hind limbs around four million years ago (Knapoi region, Laetoli, mentioned in Stoczkowski, 2002:75). This changed the perspective on the surroundings quite drastically. Not less important it freed the hands from the burden of supporting locomotion, hands which already were skilled in grasping and holding. They provide and organize in a prototypal way access to what was of importance in the environment. In that sense the motive determining the drive onto the world got specified by the abilities of the hand. Not all what in principle could satisfy hunger for instance appealed, but what the hands could grasp.

So the primary motives provide the **first** layer of meaning. The hands provide the second in that they refine the first by their selective function. This **second** layer is easily overlooked, disappearing unnoticed in obscurity. This is remarkable because in finding out what something unknown is we Westerners normally look at what it can do or what it can be used for. Not so in

the case of the human. Blinded by the Greek heritage we focus on its essence¹⁰⁸. If man would have been approached as a thing unknown, then the hands would certainly stood out firing up understanding.

In line with the most fundamental drive and with the embodiment abilities of the hands the tool supporting action appears as the **third** layer of meaning. The tool had initially a dedicated task consequently meaning. Not in the sense of a tool as a general category referring to any implement supporting action, but for instance as a particular scraper, not the general category of scrapers, let alone tools.

The fourth layer: meaning by association

Accidentally the scraper could have been involved in another event of importance, killing an enemy for instance. The presence and moreover the presentation of it on another moment and in another location could have sparked a condition of reminiscence in the actor and others having witnessed that event. Based on association the tool in question acquired a semantic payload. This instantiates the **fourth** layer of meaning.¹⁰⁹ In itself a meaningful experience provoked by association is not extraordinary. An animal of pray picking up the smell of a predator or hearing the sound produced by one will also be fired up as if the threat was actually present.

So experiencing an imaginative content coming down to reviving a situation not actually present is not exceptional.

The fifth is meaning by stipulation, a layer coming into being once the opportunities of displacement are fully explored and exploited. The structure speaks for itself: reference made to some event in the world is one link complemented by further links amongst associations. Perceiving a shelf of milk brigs in the supermarket can provokes thoughts on a stay on a farm, in particular milking cows, the scent of hay and dun. As a observation in the sideline, this is also the level wherein elements are said to define one another, by some even considered to be a closed system.

The sixth layer builds further on the previous one by applying particular methods of relating based on similarities or shared characteristics such as in metaphor and in metonymy. It could rightfully be argued that this is not really different from the fifth layer. That is indeed the case but it ads a particular technical intervention flavouring meaning in a particular way and should therefore be put apart.

Schematic overview

¹⁰⁸ "Ti esti ti" or what is that – that what is (referring to the unchangeable essence, the nature of it).

¹⁰⁹ There (at least) two more layers. The fifth is meaning by stipulation, a layer coming into being once the opportunities of displacement are fully explored and exploited. The sixth layer builds further on this by applying the methods of projection. It could be argued that stipulation is based on projection and so this distinction should not be made. This is open for discussion but not really of importance as these layers are however not relevant for this exposition.

1st level	Primary motives determine what is meaningful
2nd level	The body of the organism provides sensory and motor sensitivities and abilities modeling further the character of what is meaningful. In case of the human species being bipedal and the availability of the hands is are crucial factors.
3rd level	The primary use of a tool adds its proper layer of meaning (scraping, carving or hammering...)
4th level	Meaning by association adds a meaningful payload to the implement used in supporting action. Displacement enters the scene.
5th level	If a particular association is brought in relation to another content also based on association, an association of second order arises as in the case of semantic fields, a linguistic structural environment as meant by de Saussure. On this level meaning by stipulation enter the scene. In this elements of 2nd order associations are used to compose new meanings.
6th level	Particular application of the former: based on similarities relations between associations of 2nd order are introduced (projective)

10. In and out of the box

Taking Darwin serious & a perspective on the basic patterns of everyday understanding

Essay

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Abstract

The Western culture is characterized by a set of fundamental beliefs underlying a common sense as well as a scientific understanding of the world. Most of the theorizing germinates from out and develops within the borders of it. It embodies a style of reasoning which rightfully could be coined "thinking within – the confinements of - the box". The first part wants to expose some of these beliefs. The second part explores what an understanding of the environment of the human as an animal could be when taken the implications of Darwin's approach serious. It in broad strokes sketches out the condition serving as the stepping stone into a development of the human skills we are familiar with. The demystification on the one hand, the sketching of the initial condition on the other, both approaches hope to help a way of thinking out of the box.

"The tendency has always been strong to believe that whatever receives a name must be an entity or a being, having an independent existence on its own..."

J.S. Mill

"We have to make use of language, which is made up necessarily of preconceived ideas. Such ideas unconsciously held are the most dangerous of all"

Poincare¹¹⁰

¹¹⁰ Quotes mentioned in Ogden & Richards. 1923. The meaning of meaning. New York: A Harvest Book.

Introduction

A quote in a webinar inspired this contribution. The professor in charge judged that for an idea to be taken serious it should fit in the established or generally accepted body of science, that corpus of knowledge on which exists consensus in the academic community.

That makes sense. One should be reluctant to accept any type of new wave or all too high metaphysical speculation. But at the same time no attention seems to be paid to the risk of that recommendation. A suggestion fitting accepted science also accepts the prevailing framework without much if any reservation at all, historic biases included. The way the scholar in question shared this judgement sounded as if science is objective beyond suspicion and radiates a sphere of absolute neutrality. But for those who studied history of science and of philosophy, the fact that this is not the case is apparent.

Engaging quite blindly in a scientific perspective implies submission not only to its methods but also to its models of the world and accepted representations of nature.

This kind of orthodoxy has a flipside. It neglects taking into account particular historic biases and blocks possible creative insights, hinders thinking out of the box which amazingly enough often is getting praised by the orthodoxy following crowd.

In these introductory lines I have mentioned that a way of thinking develops only within the borders of a set frame of reference. What I want to do is sketching out that frame of reference promoting to transcend the borders and by this engage in thinking out of the box. But in order to be able to appreciate the particularities of it more clearly I will start with sketching out some elements of the orthodox frame of reference. As for thinking out of the box, one should in first instance be aware of what is in the mainstream box; being aware of representations running in the background and constituting the mainstream understanding of the world.

But I should not delude myself. What will be offered also expresses a particular perspective.¹¹¹ The endeavour is to explore and unveil ingrained biases in everyday thinking.

It might be observed that literature criticizing the ins and outs of the scientific practice is ready available. Agreed, but the subject is often approached from a too narrow point of view, social construction for instance or feminism, development of paradigm's and the like. Moreover academic jargon not all that easy to digest is often used.

This contribution wants to focus on the most basic traits shared by many scientists but equally present in the knowledge of the public in general. I also want to be brief. One should not struggle with a hefty volume to obtain some insight in this intriguing subject.

Before starting some particularities need to be clarified.

The initial position is that of an organism confronted with an in principle chaotic influx which needs ordering into a meaningful scene in turn triggering a response. The condition the primary

¹¹¹ For that subject "Storytelling, setting the human apart"

motivation is in and the particularities of the body provide basic meaning. Recurrent situations will consolidate responses into stable response patterns. In some species parents will learn their growing offspring useful behaviour and tactics. So far for the first level but that will not be the subject of discussion in this contribution. The focus will be on what specifies the human species that is the presentation of narratives providing a meaningful interface to the challenging environment. Leaving the initial condition out of the discussion, the human confronted with a chaotic environment projects verbalized interpretations onto it by this creating an ordered scene generating meaning in turn provoking responsive behaviour. This projection is not necessarily one coherent scene but in most cases will be a complex composition of different interpretations dealing with particular parts of the scene.¹¹² The idea is that the human is confronted with a conglomerate of interlocking meaningful narratives and the aim is to provide clarification on the historical roots of some of these.

This allows a second important remark.

In trying to raise a clear picture about how the human understands the world two entry points lay in front of us. One has been expressed along the previous lines: different narratives dealing with aspects of the challenge occurring from an integrated scene. In that case narratives are no more than indeed narratives, expressing versions and as such instruments supporting an understanding. The specificity of this will become clear with the next approach. With that it could be agreed that the interpretation is indeed no more than a narrative but a narrative which step by step approaches a reality corresponding depiction. The narrative will remain a narrative but will in the end reach a condition of a truthful depiction of the world as it really is out there, at least it will be appreciated as such.

That is actually not the path followed here and I will make clear on what historic grounds this appreciation came into being.

In short, the way we take the world as perceived as a realistic depiction is actually a composite scene of different pictures each of them with a historical provenance.

With some imagination the understanding of the world could be presented as a set of different scenes on a canvas constituting an overall picture or story. The trusting observer takes what is seen for natural. That is how things are. He seems to be unaware of the fact that these partial understandings drift on historical events constituting precisely the scene observed or rather lived. As said the aim is twofold. On the one hand unveil what is experienced as being the natural and articulate the contours so they become salient in the awareness. On the other hand offering a historic introduction as such clarifying that what is perceived is not a natural given but the result of historical events and twists.

¹¹² Dennett's suggestion of competing narratives or multiple drafts sounds familiar here.

Part I, the Western way or thinking inside the box

No blank slate

The goal in this contribution is to focus on schemes giving form to the Western way of thinking. There were however earlier changes also of profound influence on the way the world had and still is to be understood. For the purpose of illustration three examples will be on offer.

Agriculture is beyond doubt one of the most far-reaching. The possession of surplus changed the prior group hierarchy based on skills, age and the behaviour of alphas like in chimpanzee communities. It introduced possession and heredity as an organisational principle. It redefined the role of the sexes. These are not merely interesting remnants of times past but principles incessantly organizing the communal structure and dynamic to this day. They do not only organize the social structure but also flavour the appreciation of different roles inherent to it.

Writing is a second game changer. There had been associations between material implements and meanings earlier. But these were rather presences than representations. To clarify the difference take the case of the crucifix. Not one worshipper will think of it as a reality corresponding depiction of the man presumed to be the son of God. The cross stands for the divinity; it makes him present stronger still it emanates his presence. In a similar sense cave art should not be considered to be reports of hunting scenes. The animals depicted emanate their presence. But with the introduction of writing around 5.000 BCE the elements used in associations become stereotyped and systematized. As bearers of meaning they could be stored allowing to be transported over long distances or to transfer information overarching generations. Consider the consequences of the introduction of radio communication or even more recent the World Wide Web. The introduction of the distribution of written messages must have had the same impact on the understanding of the world.

Dualism as an organizing scheme will be the last example. In the present time it is often understood rather narrow as the opposition of mind and body. It is however a pervasive principle of organizing data. It divides the world in an inside and an outside, a visible and invisible, a tangible and not tangible, a good and an evil. It does not only order data but imposes principles of understanding. As such what is inside is not only topological different from what is outside, it might also be different in character. This scheme showed itself early in Zoroastrianism and in Manichaeism. Before that period what would be called moral today took a tangible form. Bad was the tribe invading and menacing the peace of the own group. In that sense evil was indeed quite tangible. With the religions mentioned good and bad became associated with divinities and people had to decide what side to choose as guideline for behaviour in the community. Good and evil became abstract principles opposing one another. Duality as a tension between values became an organizing principle and still is to this day. Take for instance the suggestion of reality opposed to the deception of the senses, a model going back

to Plato. As an organizing principle it does not only organize consideration on that matter, it installs beyond discussion reality as the referent of the concept of reality. That is one aspect. The way reality as referent has to be filled or understood is another depending on historical determinants.

So the particulars which will be offered further did and do not start from a blank slate. They are built on organizing principles already present.

Nisbett , East versus West – the introduction of the invariable.

There is a remarkable agreement between the Taoist and Confusionist East and the pre-Socratic Greece. For both the emphasis was on finding the right way to live, a rather ethical and legislative inspired attitude. However around the 5th/6th century BCE something changed on the Greek side. Finding truth became prevailing, moreover by looking for natural causes and no longer for the supernatural as previous. This reorientation got according to Geoffry Lloyd (1970) fired up by the invention, I would prefer *introduction* of nature as an invariable instance present outside the subjectivity of man.

Intermezzo

I would word it somewhat differently which does not change the outcome but depicts the initial situation more clearly. I prefer to call the period preceding the mentioned introduction as a condition in which existence is finding articulation. Speaking is not only an act of transferring information, but in first instance and above all a way of existing. It collapses with it. It is an instantiation in the same way as walking and taking a breath is.

And then a turning point occurs in which that way of being itself is becoming questioned. Three determinants could be decisive for this. One is the introduction of the invariable as criterion in order to overcome subjectivity as explained by Geoffry Lloyd. Graham Harmann assumes something similar but caused the introduction of agriculture providing surplus which had to be stored and thus remained stable overtime in contrast to the dynamics characterizing hunter – gatherers. But the third element which is not getting mentioned is in my opinion the act of contemplating itself because contemplating consolidates what is getting focussed on – however it might be dynamic – into a solid form in a metaphorical sense ‘observable in a confrontation’. Think of Heideggers Dasein – that what is there (in front of us).

The transition from fully dynamic into a stance of contemplation can also be observed in the development of a growing child.¹¹³ In the early stage it does not so much inform the other, it rather expresses himself, demonstrating a way of being expecting that the other under the impression becomes influenced by this. Only later the awareness rises of his role as an actor transferring information, aware that the other can accept but as well refute the content of it.

¹¹³ This agrees with the condition Wertheimer coins as “die gemeinsamen Schicksals”.

This tilt or this development deserved extra attention. It concerns a change in attitude from acting into contemplating. I have called this the introduction of aboutness on the level of semantics (in contrast to the level of technique; the first has to do with the trajectory of Western thinking, the second is involved in the process of becoming human characterized by culture).

But once that instance got installed and accepted in the common appreciation a new question dawned: what is the character, the nature or the essence of that what is invariant? As such the invariable appeared in the way the world got questioned and understood. There was something invariable for instance in the category “tree” or “house”. Individual trees belonged to the same category with an invariable essence apt to be approached from a naturalistic point of view.

At this point Nisbett’s findings are getting sense.

He observed that in the Greek texts from that period invariable categories started to get separated from a context taking an isolated form standing on its own. That differed from the inclination in the East where the importance of relations and events remained dominant. Therein ideas were not evaluated making use of formal rules in order to find the truth as in the practice which started after Socrates, but got opposed one to another. The latter condition was precisely the one the debating pre-Socratics found themselves in and wanted to escape with the help of what Lloyd called the invention of nature as the invariable instance or probably a more proper qualification “criterion”.

The importance of this explanation is that it sketched out the particularity of the Western way of approaching and appreciating the world. It may be not the only possible version to explain what exactly happened in Greece¹¹⁴ in that period, but it is a version trying to solve an occurring problem. With its concern for the invariable and its categorical characteristics it still is the underlying thread of the contemporary way of Western thinking. It structured that way of thinking in a definite way. Moreover Galileo’s scheme would not have been possible without it. But again: it is a particular way of framing things.

The moment has come to introduce historical scenes which from then on will guide the understanding of the world.

Plato’s ultimate reality

Among the numerous attempts to offer an explanation on the essence of the invariable, recall Nisbett, Plato’s contribution has been of such an importance that it provoked Alfred North Whitehead the observation that the history of Western philosophy is nothing but a footnote to Plato.

¹¹⁴ As an indication for the relevant region around the Aegean Sea; Greece did not exist in that period.

What does he refer to?

The well known allegory of the cave expresses the view that the impressions the senses bring forth are no more than shadows of what “*really*” is going on. Plato was sceptic of the truth value of the realm of the empirical. But this did not exclude man completely from the ability of catching a glimpse of the true world. Fortunately the soul before it took its place in a human resided in the realm of ideas, the purest condition of truth. So by the possession of a soul and the application of the right method – rational thinking – man could obtain a glimpse of reality as it really existed in itself.

This approach may provoke the idea that there is a proper method to capture a glimpse of reality but that is actually not the core of the presentation at the same time the underlying pitfall. The mise-en-scene is similar to the anecdote in which the suspicious spouse asked the husband “where did you meet her yesterday?” The where question veils the trap: the firm implication that he met her the day before. Likewise the promise to catch a glimpse of reality implies the existence such a reality; even if rationality would only render a depiction, it would none the less offer a one on one corresponding representation of reality as it is existing in itself.

With this Plato installs firmly the conviction of a truthful depiction i.e. knowledge. This conviction is to this day shared by many, not only naive realists, but also many in the world of science.

To articulate the particularity of this approach as clear as possible: it neglects completely the determination of embodiment.

The baffled remark “do you mean that the reality out there is getting questioned?” actually illustrates how deep Plato’s suggestion on that matter is engrained in common belief. But the content of the question is not really the point here and as such does not have to be answered. The focus to be realized is twofold. In first instance pointing out the provenance of the idea of an objective reality which in turn provokes an effort to get some degree of grip on it. In second instance the very idea itself conflicts with the inherent restrictions of being embodied.

Galileo’s move, a defining turn

The figure of Galileo is the exponent of a new zeitgeist prepared by others like Oresme, Albertus Magnus and Roger Bacon¹¹⁵. Apart of thought experiments such as the falling spheres he also paid a lot of attention to the practical dimension thereby noting values on several intervals. This allowed comparing different settings or the same setting under different circumstances. The importance of that system cannot be valued enough.

It took place against an Aristotelian background whereby objects were considered as emanations of potencies driven to realization. The tone was one of dynamics. The world was a

¹¹⁵ Oresme, the world as a giant mechanic contraption; Bacon and Magnus, nature explained in terms of mathematics.

tangled web of turbulences emanating signatures or signs of the divine will and as such providing the perceived environment with meaning. Galileo's representation in the guise of numbers which could be compared provided a model allowing prediction of the results of organized technical operations. The world until then solely explained by the will of God became gradually controllable by practical human intervention. Nature became a book written in the language of mathematics.

Galileo had not need for potential attributed to objects. He only made use of the dimensions of an object which could be measured. He did not even abstract the potentialities in a voluntary way; he only discarded these as obsolete for his purposes.

His approach was successful in the perspective of manipulation of the environment. It resulted in a redefinition of the object from an entity filled with tension to an inert unit characterized by measurable dimensions. It should be clear had Galileo had no intention to a redefinition. It followed in a natural way from the success of his approach.

It brought with it a redefinition of the representation of the human. Instead of a dynamic being, a unity provided with a soul, the whole taken by the realm of God a partitioning started to take place. The human tended more and more to be understood as a body following laws of mechanics – Galileo's procedures - provided with a mind able to follow rational rules. This is not the place to discuss this in depth but of importance is that Aristotle's view on the human is one interpretation, while Galileo opened the way into another. The point here is not about the correct interpretation but on the fact that both are depictions, ways of understanding based on different sets of premises.

Galileo's intervention had yet another consequence.

Discarding all dynamic characteristics did not make these disappear in thin air. The increase in size of a plant over time could be measured but the act – vital in nature – of growing escaped this type of approach. The tendency to act, emotions undergone and the quality of colours seen, all these features did not vaporize; they remained experienced but somewhat orphaned. In time they tacitly became part of the realm of consciousness, of the mind. Only in 1866 they got properly labelled "quale or qualia" by Charles Sanders Peirce, a term picked up in 1929 by Clarence Lewis. In 1974 it received a maximum of attention when Nagel pondered the question "what is it like to be a bat?"

The introduction of the invariant of which the essence would become questioned, and the changed approach of an object became the watermark of Western thinking until this day. It is so engrained that it is taken to be natural. If there would be something that might be called the blueprint, this would be it.

Further now with more pieces of the puzzle constituting the canvas.

An understanding of man

The actual appreciation of the human in the Western culture from an ideal point of view is seen as an autonomous and unique identity standing apart from all what surrounds him. His personal life is considered of supreme value, the integrity of it legally well regulated. As an organism he seems to dispose of capacities never observed elsewhere. From his own perspective it appears that he is body with at the same time a dimension of experience escaping or transcending that material condition. The workings of the brain are presumed to be responsible for that particular if not mysterious condition.

The idea is to depict a few threads contributing to the constitution of that particular narrative.

The brain as causal centre

One of the pieces is the contemporary prevailing belief concerning the workings of the brain if not as the centre of life in its entirety, at least as the initiating instance. Nothing seems to be more important than the activity of the neural tissue. For that conviction are at least three historical changes responsible.

1. The contribution of Willis: brain-centrism

For Aristotle the heart is involved in emotion and thinking. This belief was still defended by Henry Moore in 1652. Even today when someone is getting emotionally moved he intuitively speaks from the heart and when engaging full heartedly (sic) into some event it is also said that he is taking it to heart. All things considered when emotional turbulences are in play, even to this day the heart remains the first candidate to be mentioned. However it cannot be denied that the brain gained importance in spite of the fact that according to Aristotle it merely evacuated the heated fumes produced by the activity of the heart. On the contrary today all serious work such as thinking, deciding and being conscious is attributed to the workings of the brain. In this Thomas Willis a medical doctor from the 17th century played a significant role. His anatomical studies of brain and nerves got published as "Cerebri anatome" in 1664. The reference in this contribution is short, anecdotic even, however the effect of Willis' work cannot be valued enough. He provided the fertile soil onto which the whole movement resulting in the actual glorification of the workings of the brain commonly coined 'brain centrism' could take place.

There is more than one point to be made. First of all it makes clear that there have been different versions to what got considered to be functionally central to the condition of being a life. Secondly, the way the brain is becoming appreciated exposes a particular meaningful orientation: the brain as causal centre fitting the already existing scenario of the quest for the essence of things, in that case of human life in the natural philosophical appreciation, or in more contemporary wordings: in a biological sense. It should be taken into account that in the 17th century the divine contribution in the understanding of the workings of nature lost considerable terrain however God remained prominently present behind the curtains.

2. From Galileo to Hooke : the causal workings of the smallest constituents

In “*Il saggiaiore*” or “*The Assayer*” written in 1623 Galileo proposes that what can be perceived by the unaided eye is caused by the workings of particles so small they escape observation. He as is well known is also the man using lenses to bring forth a spyglass allowing stakeholders to perceive as early as possible the arrival of ships. But the view of a ship is no revelation; everyone knew what a ship looked like. The shocking discovery took place with man such as Anthony van Leeuwenhoek and Robert Hooke, turning the contraption upside down and observing life on the scale of the very small not seen ever before. This not only opened a dimension beyond imagination but it fitted the aim looking for the essence using the dynamic pattern of cause and effect. The use of the latter had become extremely clear through the experimental method executed by scholars like Galileo. This pattern became experimentally confirmed by the work of Ramon Y Cajal in 1887 observing discrete units in what until that then was considered an integrated network.

At this point the following scene comes to live: the shift to the neural workings as the centre of human activity while the brain as the physical instance takes the form of a network of myriads of discrete units.

It could be argued that this shift and changing appreciation is a sign for the progress in the direction of a more truthful depiction, i.e. approaching ever more to the way reality actually is out there. This however is a perfect translation of what Plato offered in prospect. Unfortunately the acceptance of that understanding veils the underlying dynamic. Galileo demonstrated a method consisting of different actions resulting into a product which could be replicated, i.e. of which the result could be predicted. Y Cajal in first instance made observations of brains removed from corpses, he used microscopes as perception supporting tools and he interfered with the neural tissue along the instructions of Golgi. In short this is a highly operational and technical approach. If that testifies of something at all then it is about a practice embedded in an operational context. The idea of getting closer to the truth-reality is pure metaphysics with the particularity that the historic origin can be traced back.

3. The computer metaphor

The brain considered to be the causal centre is actually a compound of fat, water, blood vessels, neurons with dendrites and glial cells. How could this bring forth ethereal products such as thoughts and qualitative sensations as the enchanting experience of a sunset in the tropics?

Fortunately different metaphors have been helpful. With the invention of the telephone the connection desk offered a useful model to start with. It got followed by the fact that a radio had to tune in to a certain frequency. It gave rise to the representation of the brain as more or less solid matter tuning into what was around and as such rendering sensations and thoughts. An even more perfect model became available with the by Turing introduced machine opening the era of computers and information processing. A striking particularity of that contraption was that it made use of very simple conditions which could be expressed using Boolean values of

being true or false. However being values and thus escaping grasp could easily become mimicked by turning switches on or off, a practice one was familiar with from the electrical facilities in day to day life. This could in turn be mimicked by electric relays, switching radio tubes, further by transistors and finally by integrated circuits accumulating thousands and thousands of switches. This corresponded very well with the assumed workings of neural tissue. Both were complex in structure and dynamic, both were based on switching conditions (electric chemical workings of synapses) and the effects of all these escaped the pure material substance of the computer on the one hand, the white and grey matter making out the brain on the other. Switches, connections and at some branches provided with threshold conditions guiding the signal into a particular circuit could be the hard ware mirroring streams of information tipping over into decisions under certain conditions.

Since then the workings of the brain often got described in terms of programs and algorithms processing streams of information of some sort.

The previous summary may now be supplemented by an explanation of human life based on workings of the smallest constituents hidden deep in the organism. These can be understood as the workings of an information processing computer provided with a central processing unit making decisions and controlling behaviour.

Man as a dualist creature

Understanding Descartes' aspiration

Despite the fact that most academics refute a dualism based on Descartes' proposal, the model is still tacitly influential. This justifies some background information.

His approach did not appear out of the blue. The development in ancient Greece has already been mentioned. As a reminder, different explanations required a criterion enabling a decision on which argument was paramount. The invariable got introduced provoking in turn the question into the nature of the said instance. It became an issue provoking a plethora of possible answers. Long story short the world as set of all that was out there became the object or the problem to be investigated. That is the first step. Overtime natural philosophers presented different solutions. Some fell back on what the senses brought forth, others stressed the importance of rationality. At the same time there was a tension with the way revelation explained the world and certainly with the way the church forced its version upon the thinking man. Taking a giant step, it all resulted in a slumbering turmoil raising questions about the quality of human produced knowledge. To make things worse, the 16th century was also a period of endless military conflicts reinforcing a feeling of doubt and uncertainty. All this provided a background for a

shift from the object out there as problematic given – what was the nature of it - in the direction of thinking subject.

The question arose quite naturally whether human knowledge was reliable at all and in line with that problem what procedure should be followed in order to bring forth certain knowledge. This is the challenge Descartes found himself confronted with.

Another fact to be taken into account is that he was a keen mathematician. He participated in the new “scientific” way of constituting knowledge. From a very different corner but also of influence is Luther’s suggestion that every man, not only the clergy, was provide with ratio allowing him to understand God’s word. By this ratio became in a sense a secular instrument in the effort to raise reliable knowledge and importantly within reach of all. It should neither be forgotten that Descartes was a devout catholic maintaining relation with Marin Mersenne. The latter worried that the Renaissance scientific approach would explain everything leaving God aside thus jeopardising religion. Descartes shared this concern. He wrote Mersenne that he learned about Galileo’s condemnation and considered seriously to burn all his writings because what he proposed depended strongly on Galileo. All these are elements sketching the sphere of the time.

The animal dimension

In his model of the human, the body - famously coined as *res extensa*, was inert without powers of whatever kind. The dynamics could be imagined like the workings of a clock, one part pushing the other. Remember the influence of Galileo with his practical experiments in which cause and effect became registered in a quantitative way. It facilitated the suggestion of animals as some kind of automaton; the workings could be explained by principles of mechanics and hydraulics. This should however not to be taken all too narrow. In line with Aristotle’s view suggesting that experience was a function of the animal soul, mental powers of man in so far he functioned as an animal should also be explained following the logic of mechanics. It is telling that Descartes was intrigued by mechanical animals and human figurines built by artisans. Today many are stunned by effects brought forth by computers. Something similar took place in Descartes’ lifetime in relation to automatons. It is what underpinned the idea that Descartes thought of animals as pure mechanical automatons.

Soul, mind and ratio

Concerning the soul or the mind his approach is not so clear cut as often presented. Underlying his ideas raged a struggle to rescue the Christian characteristics of the soul; as said he was a devout Christian.

In his view the soul harboured the power of thought or reason (*ratio*) separating the human from animal behaviour in experience and in the faculty of language. Animals lacked the sense of awareness of their own awareness. They lacked reflection which precisely allows the human to

respond to novel situations contrary to the animal which only can fall back on mechanic reflexes. It is remarkable that he observed that animals cannot think with linguistically formed propositions precisely because they lack language. The ability to accomplish that is what Descartes considered to be the backbone of knowledge, the characterizing feature of reason. It emerged from a language of the mind – the source, by this situating language firmly in the mind which is of relevance for this outline. As a casual note, reference is made to the insights as formulated by Chomsky and Fodor.

To retain is that mind here equals ratio and as mentioned linguistic propositions are at the heart of it all.

Leahy in Erneling¹¹⁶ observes that Descartes project was deeply influenced by the effort of saving his foundational philosophy from Galileo's fate. This is another way of saying that Descartes bended his views in order to save the model he had in mind, at the same time avoiding a conflict with the still almighty Catholic church. From this effort raised a depiction of the soul, the mind or the ratio completely different from the body, almost absolutely divorced from it were it not of the minuscule connection via the pineal gland. As he explained in the Meditations, Descartes considered himself nothing but a thinking thing or mind, a thing that doubts, understands, affirms, denies, is willing, is unwilling, and also imagines and has sensory perceptions. All this suggests a not-material substance seems, a *res cogitans* – a thing that thinks. It is a substance without matter not occupying space and so not extended and, completely separate from the body.

The importance of the following justifies quoting the paragraph:

"Descartes was not the first to prove his own existence from mental activity. St. Augustine had said, 'If I am deceived, I exist' and from Parmenides is known 'For it is the same thing to think and to be'. What was new and of profound implications was Descartes' radical reflexivity, his focus on the self and his invention of consciousness as *a thing that could be considered*, in short that could be studied." Augustine had turned inward and found God. As Leahy observes Descartes turned inward and found only himself. (in Erneling, 2005:48).

With and through this gesture the self became an object of attention.

Leahy specifies with the following example. Asking you to look at the green colour of a leaf in the Aristotelian approach one would indeed focus at the colour of the leaf in front of him. In Descartes' approach one focuses on the experience of green in consciousness – paraphrasing Nagel "what is it like to experience green?" (in Erneling 2005:49).

Of course contemplation of the self occurred before but mostly in a religious context, man considering his existence in the light of God. But here the focus turns in the direction of the

¹¹⁶ Leahy is professor Emeritus psychology and philosophy at Virginia Commonwealth University, USA. He has a chapter "Mind as scientific object: a historical-philosophical exploration" in Erneling, C.E., Johnson, D.M. (eds) 2005. The mind as scientific object: between brain and culture. Oxford University Press.

psychological self laying the foundations of the study of the mind as part of man. God remains undeniable present in the background, but man becomes ever more understood in a secular psychological sense. Locke, a contemporary of Descartes, would even go as far as discarding the need of a divine instance altogether.

Nowadays the idea of the occurrence of an inner self comes as natural. But one should realize that this is a novelty deserving more than only taking note of it. It has to be realized that from that period on considering seriously the inner self as an instance *entered* the experience. The inner self got introduced as 1) something which occurred and 2) could be considered. Not much later the practice of keeping a diary appeared. People kept track of inner feelings and appreciations. Thinking about oneself ascended to a new level – there was some thing there inside, a personality, a mind-like instance to be taken serious, to be taken as something real.

This dynamic divided the world into an objective mechanical dimension to be known scientifically and a subjective one known by looking inwardly, by consciousness.¹¹⁷ At this point appears what Dennett would coin the Cartesian theatre. The inner self looks at a screen onto which the data gathered by the sense organs are projected. From then on the naive direct contact with the outside world gradually got replaced by a state of affairs in which sensations are getting projected in the mind or the consciousness, projections which then in an act of reflection could be examined. Medieval believers in observing the world participated in the idea of God so were externally oriented. Descartes turned the focus inward looking.

Perception, from out to in to in to out

For Aristotle something existed as the junction of matter and form. In the act of perception the sense

organ only caught the form. So what is getting perceived is actually a part or dimension of the external world. This implies a direct correlation between experience and universe. Near the end of the medieval times and with the beginning of the Renaissance period the practice of mathematics became ever more influential. The truth became increasingly generated by calculation rather than by perception. As Galileo observed the senses are prone to deception while reason with mathematics at its core opened the most reliable path to true knowledge. The

¹¹⁷ It might be useful to remind the historic shifting in meaning of this concept. At first it was understood as *conscientia* that is “what we as community know”. That group became restricted to a selection of insiders – the *cognoscenti* (think of the contents of a board meeting not made public to the common members). A step further was knowledge kept in a voluntary way secret to oneself (*conscious sibi*). In the Middle Ages the term acquired a twofold meaning: knowledge that embarrassed one who has that knowledge – conscience enters the stage and knowledge which is private to oneself, the most intimate of thoughts of which the public can not have knowledge. The voluntariness became replaced by a condition of inability. This evolution, in particular from the Middle Ages on follows the line explained in the text. For an interesting elaboration of this subject: Nicholas Humphrey (1993), *A history of the mind*. Vintage.

scholastic scholar oriented the focus to the outside world presenting him what was really out there. The successors turned inside to working on calculations in order to generate a true description of reality. As Galileo observed “the book of nature is written in mathematical language”.

Here too there is a reorientation from the outside to the inside. All these elements are of course only dimensions of a general reorientation resulting into the installation of an inner space. It is a telling act to mention that Descartes’ insight demonstrates the pinnacle of this movement.

Reorganisation of the psychological scene

The idea or the concept of an inner space available for inspection in short introspection, took firmly form. It became the natural way of thinking. The experience got reified, provided with an already existing label “consciousness” and as such acquiring the status of a genuine object of investigation.¹¹⁸

Recall the redefinition of the object through the approach of Galileo. It lost its Aristotelian dynamic character and became a thing prone for explicit measurement and systematic manipulation, in short a type of instrumental consideration. Something similar took place here: the naive direct contact with the world got lost and replaced by a type of consideration which is characteristic for a type of science as sketched out by Galileo. Consciousness, the inner theatre and what happens in that theatre is becoming prone for instrumental consideration. Experience became depicted in an act of reflected, introspective study bringing forth an object of experimental control.

It should be noted that focussing on individuals, Galileo and Descartes in this case, as the geniuses par excellence is somewhat misleading. It facilitates composing the narrative. But they should rather be considered the visible exponents of a changing Zeitgeist.

As an annotation in the margin recall the introduction of nature as the invariable criterion against which subjective meanings could be evaluated. Diverse subjective opinions provoked the necessity for an instance which escaped subjectivity, an instance independent of human volatility a condition known as objective. On closer inspection it could be said that subjectivity brought forth objectivity. They are not opponents but one is actually the fruit of the other.

¹¹⁸ At the same time, but this transcends the scope of this discussion, an impossible struggle is getting fired up. What has been reduced to an internal subjective case in the first place, should no become withdrawn from that subjectivity seeking to grant it a status of objectivity. As Leahy comments “Galileo and Descartes made it imperative to study us—to practice psychology—so that the subjective contributions to experience might be subtracted, leaving only objective truth”. (in Enerling, 2005:50) Here too history repeats itself. Remind that the introduction of the invariable (*hoti esti*) was brought forth by the endeavour to escape the undecidability of different arguments put forward.

Leahy comments “Galileo and Descartes made it imperative to study us—to practice psychology—so that the subjective contributions to experience might be subtracted, leaving only objective truth”. (in Enerling, 2005:50) This is an illustration of history repeating itself. The dynamic is escaping subjectivity by this realizing objective knowledge as the ultimate goal, an endeavour reflecting Plato’s suggestion of an ultimate reality.

Man an autonomous individual

The shift in the appreciation of the self experienced as an entity however provided with a soul into the direction of a dual configuration of a psychological nature, has been subject of discussion in the previous paragraphs. But there were also changes taking place from out very different corners such as politics, military and profession. The impact of these changes will briefly get explained below.

From Fremd to Selbstzwang

Changes in the domains of the military, urban, economic and demographic nature have been published by the sociologist Norbert Elias in “The civilizing process” (1939).

According to this author two major lines of force changed the pattern of the personality structure.

One had to do with the reorganization of gangs of mercenaries reputed for brutality into trained regular armies ascertaining order and keeping peace. Their police like interventions suppressed explosions of affect in the public arena. In order to avoid punishment by the military one could better learn to control all too wild impulses. This practice became a psychic trait and as such a consolidated part of the personality structure. With some exaggeration, brute confrontation made room for a being well mannered.

The increase of urbanization into ever larger centres of population was the other determining force. On the one hand people had to accommodate in living close together and on the other a division of labour into specialized professions took place. This also required a considerable effort in self-restraining at the same time raising the effort to attune with the particularities of others.

These forces complemented one another. There is the external pressure to behave oneself and there is the need to self-restraint in order to attune to the behaviour of others. Elias coined this shift the transition from “Fremdzwang zu Selbstzwang” (from outer to self control). Courtly rules – rules esteemed proper for a court, became the stepping stone into what would become considered common politeness. Direct action expressing personal interest got gradually replaced by behaviour aimed not to disturb the feelings of the other.

The importance of this is the shift from an interpersonal tension in the public arena to an interiorized but controlled tension within the individual. Psychic turbulences became private and hidden (inside). This process of interiorization consolidated into a permanent psychic condition. The world experienced shifted partly from an outside arena to inside theatre.

From social interconnectedness to individual integrity

There is yet another transition in accordance with what has been mentioned. Middle Age society is characterized by a public oriented social control. People lived in large family-groups governed by interconnectedness and interdependency. This type of structure shifted overtime in the direction of an increasing urbanization as mentioned and of the upcoming of the citizen. The French Revolution as catalyst broke down the old structures and promoted the individual in a new guise characterized by a type of integrity not to be questioned, of private property and private type of life not to be touched. It is obvious that this supports and strengthens the idea of an inner private life.

From res communes to private property

Before agriculture, the idea of private owned land was even not thought of. This changed with the labour invested in cultivating the land. It raised quite evidently a feeling of ownership. In the Roman period lakes, ponds, the shores of it, most of the woods and wildlife were considered to be common (res communes). This got even in part confirmed by the Magna Carta in the 13th century. In the 17th century Locke considered a balance between the commons and private property. His concern got inspired by a tendency which began in the 15th century to privatize and thus to enclose what was once land which could be used freely by the community. The importance lies not only in the fact that it happened but that it was part of, at least developed in parallel with the transition observed by Elias.

Labour becoming a commodity

Part of the previous change there is yet another important for the way man in a Western cultural setting holds a picture about the way he is and functions in the world.

Whatever the deplorable condition the serf in the Middle Ages found himself in, in a way he was one with his life world. Not only had the Cartesian split not entered common thinking yet but of importance for the actual context whatever the poor conditions of life, as a property of the estate he was taken care of by the master. So he felt part or even bound to estate and environment.

With the industrial revolution two related changes took place. In first instance labour changed from an aspect of fate into a tradable, moreover a marketable commodity. This got in a self evident way accompanied by the loss of being taken care of, the second change. The status of serf changed into that of a working man. This might be an all too simple representation as the

life of a serf was in most cases not necessarily a pleasant one neither. But the attention is drawn to the fact that labour once a dimension of the integrity of the human became an isolated instance in its own right moreover becoming an object of trade. There is a particular effect though; the well being of the labourer is not exactly the first concern of the entrepreneur interested in the labour itself.

All this seems to be part of one overall change. Galileo focussing on what was manipulable and measurable in an experiment shove aside the Aristotelian potential. This divorced the one from the other in the same way Descartes quite radically would distinguish the mind from the body. In the same sense labour as a marketable commodity became divorced from the man bringing it forth.

It all contributed to a depiction of man as a conglomerate of clearly distinguishable functional sectors: the body with its biological workings, the intellectual capacities as a realm in its own right, labour and competences as elements embedded in a commercial relation. Man became naturalized. He evaluated in the direction of a condition of being prone for technical and scientific treatment, the different sectors subject to a ever more advancing scientific Zeitgeist.

The question into the meaning of life

It would not require a lot of effort to open a library on this subject. The aim in this case is only to draw the attention that this in the form it takes today is a quite recent phenomenon.

In the Middle Ages for instance, this was not considered a problem at all. Humans were privileged elements in God's Grand Design and destined to take up a task. Even the Reformation did not contest this. But gradually religion became under pressure by advancing scientific approach which not a coincidence went hand in hand with technical innovations which would promote the movement eventually labelled the industrial revolution. The explanatory force from out a secular point of view increased. It is not a coincidence that Nietzsche exclaimed "God is dead. God remains dead. And we have killed him..."¹¹⁹. Developments within the domain of philosophy of nature from which science as understood today eventually would sprout, did not help neither. The ability of bringing forth knowledge and in the slipstream the quality of knowledge itself, became questioned. Descartes' contribution was actually an effort to answer this problem. But within the domain of investigation and experimentation, different approaches seemed to provide different explanations a fact feeding uncertainty further.

¹¹⁹ In "The joyful pursuit of knowledge and understanding" (1882).

In short, the previously unquestionable certainty of the religious lost terrain which in turn got replaced by a more secular approach lacking the meaning of life as a subject. This problem became the province of philosophy.

These few lines tried to shed light on the fact that the question into the meaning of life in its contemporary form is quite new, the product of a particular historical process.

The question of the meaning of life – part 2

There is yet another historical setting playing a non-negligible role. Again we turn back to the Middle Ages. In general terms there was no such thing as labour in the sense of a commodity. Being alive meant bringing forth some form of labour.¹²⁰ Both were in a sense synonymous. With the introduction of manufactures and later with industrial workshops labour became a commodity paid for a determined period of time. This however divided the day into quite distinct parts: the time dedicated to remunerated labour and the part beyond that (home, family, rest...). This changed the appreciation of the periods concerned. In the Middle Ages every moment of the day was occupied with some kind of labour, it was full of meaning. If that condition was whether or not pleasant is another subject of discussion. But there was no idleness. Life was fate, fate was meaning. With the distinction mentioned the paid part was appreciated as useful and by this meaningful. It served a goal. The period beyond that did not. This distinction became extremely important in the perspective of experiencing meaning in life. It became so increasingly with the introduction of some form of social support in extremis the system of social security. Take the actual condition of being retired. With the professional period in the past, the time has come to surrender to leisure. There is no duty anymore to be fulfilled in order to generate income. The goal evaporated and lying ahead is leisure, enjoyable idleness... or pure idleness in the end turning into a feeling of no longer to be of any use, the famous black hole affecting quite a few pensioners. And with this the question into the meaning in life appears in the experience.

This illustrates that historical conditions again leave their mark on the way the world is getting understood.

Three important concepts

To round up it might be useful to draw attention to two concepts which are commonly taken for being natural and consequently in no event questioned.

¹²⁰ This no doubt is a crude simplification. The idea here is to point out the two extremes as oppositions to clarify the effect on the coming into being of the question into the meaning of life.

Concept

The first is about the concept of the concept itself. There is extensive literature on this topic as it is considered a core building block of thinking. The aim here is only to point a remarkable feature relevant for the discussion at hand.

In order to get some grip on the subject it can be approached from different angles. One is an epistemological consideration or an approach within the framework of knowledge. According to the Scholastics, a school of philosophy in Europe in the period from about 1100 to 1700, "reality" could be approached in different ways. One group of scholars was convinced that only particular items existed. There was a tree and another and yet another etc. The common features justified the use of a name distinguishing these from other groups characterized by their respective common features. According to that interpretation the classification of features into a category mirrored the interest of the perceivers rather than it would indicate something existing as such in the world. This group is known as the nominalists: names are only names provided by the perceivers. As may be expected there is another group holding that the name is not merely a label but refers to something really existing hence coined realism. Remember Plato suggesting the realm of ideas holding a condition of ultimate truth. From that perspective there is something like an ideal "tree", the particular trees perceived being no more than reflections.

The other approach follows a rather psychological line of thinking. It is situated in what became known as cognitivism in particular from the corner of linguistics, in contrast to computational oriented strand. The basic idea is that perception is underpinned by principles formulated in Gestalt-psychology such as part-whole configurations constituting in basic level configurations, otherwise said the organization of functional parts into a meaningful low level pattern. Thinking about a car – not my particular car but in general - one does not in first instance think about a specific example such as an ambulance or a racing car but on an overall rather naive and vague depiction of something box-like able to receive a load and provided with wheels allowing it to move.

In the previous lines nominalism, realism and basic level categories got mentioned.

The question arises in what mode do people in every day life situations think about the world? It will be obvious that they do not ponder if the perceived is a particular (nominalism) or the reflection of an idea (realism). They neither consider what they see as something purely belonging to a category i.e. something which might be called such and such. They rather think in terms of basic level categories: this is a human, this is an animal, this is a car, this a pen etc. But they do so in a particular way not purely as a basic level type but as about something really existing. When for instance speaking about "man", the human, they do not have a pure technical type in mind, they talk about the human as if there really somewhere is something existing in

that sense. The “human” is not a sketch, it is something really existing all be it in a vague realm, that does not matter. It matters that what is perceived it is taken as some instance being real.¹²¹

This characterizes one of the important building blocks in understanding¹²² the world, in constituting the canvas mentioned in the introduction.

As a remark in the margin, it will be clear that this type of understanding, the feel of it, has affinity with Plato’s proposal about a realm in which the real has its proper place. Of course one does in everyday life not consider a separate realm of the real somewhere in the heavenly spheres, but they self evidently handle terms like human, tree, animal, mind, goodness etc. in exactly the same way.

Capacities

Faculties, capabilities, potentialities, abilities are all synonyms. It is the idea that people dispose of mental faculties to such a degree that these are assumed to be innate and differently distributed amongst the population. Some so is said demonstrate a faculty for music or for math. It does remind of phrenology a theory suggested by Franz Gall at the turn of the 18th into the 19th century. Practitioners in this field were believed to be able to discern different faculties and their respective development by palpation of the skull. That this discipline got into disrepute will not surprise. But to this day it is commonly accepted that the human is provided with typical capacities such as perception, memory, language, intuition and free will. Moreover some prove to be better in certain fields than others consequently it is not al that weird that they are attributed special developed capacities to begin with.

The discussion on the hereditary effects following the principles of natural and or Baldwinian selection and the controversy nature – nurture left aside, what is actually going on?

Innateness might be a possible factor working in the background hence escaping observation. But there is also the realm of the observable in which different steps can be taken into consideration. The first one is culturally transferred common belief that capacities might be innate. As mentioned this is transferred knowledge taken for granted and as such left aside here. Further people do observe particular clusters of behaviour such as the complex manipulations recognized as playing the piano. This is then taken a step further and interpreted as a function. In that sense “piano playing” is becoming a concept as explained in the previous section and it acquires a status going beyond the operations executed. The following step is that this becomes attributed to the realm of the mental provoking brain imaging research and suggesting

¹²¹ This condition became called “nunc stans” by Hobbes, “la foi perceptive” by Merleau-Ponty, “Urglaube” bu Husserl, also by the latter sometimes coined “Urdoxa” and by Gehlen “das Paradis von reinen Mittelbarkeit”.

¹²² I felt tempted to add “day to day” to understanding but the point actually is that this type permeates academic thinking quite intrusively too.

correlation with neural workings. Strictly spoken, only a correlation will be noted. In common parlance however the chance that it becomes understood as causation is not far off.

Cutting corners, it starts with the observation of manipulations getting interpreted as a function registered as a correlation with activities in the brain. Then the correlation is easily (mis)taken as causal and this – remember the quest for the essence – is attributed to some instance in the brain. The concept of working memory provides another example. Research executed so far reports very cautiously in terms of “it appears... it is not localized to a single brain region... an *emergent* property” (Buchsbaum, 2016)¹²³. “Emergent” has been put in italic because this is again an effect assumed to be related to the workings of some neural tissue and thus a correlation. D’Esposito (2007)¹²⁴ even goes that far to express that working memory can be viewed as neither a unitary nor a dedicated system.

The recent theory on working memory – firmly accepted in established science (recall the introductory lines of this contribution) – falls back on the model suggested by Baddeley. It a quote read in a publication by the late Hawking in cooperation with Wlodimov to mind expressing “...there is not a picture nor a theory independent concept of reality (...) we will adopt a model dependent realism (...) a model and a set of rules to connect the elements of the model to observations”¹²⁵. That is exactly what has been mentioned earlier: observations allowing a model.

Referring to Hawking is not without pretence. He is considered the cream of science, mathematical based science in particular.

A similar movement can be recognized in relation of the assumed faculty of language. As conceived by Descartes it was a faculty given by God so that man would be capable of expressing - yet another faculty that of - rational thought. Again what is getting observed? People making gestures with the hands and mouth; with the latter bringing forth sounds and as such provoking understanding and reaction in the others, and not less important also to themselves. Here the attribution of a function was already provided by history: it was a gift of god and consequently innate. This whole idea but in a more secular guise got eventually adopted by Chomsky. In confrontation with behaviourism he suggested the model of an innate capacity based on what he called the poverty of the stimulus. Here again observation of what is operationally going on provides the stepping stone, as said the function got historically provided. The drama however is that the transformational generative engine bringing forth grammar could never be found neither the neural correlates. Broca’s and Wernicke’s function are not doing exactly that. I once read the report of a French linguist spending most of his life career in vain looking for something which was not there (never was actually). And as Tim Ingold the anthropologist ponders, could it not be possible that the introduction of such an

¹²³ Bradley R. Buchsbaum, in *Neurobiology of Language*, 69.4 The Emergence of the Concept of Working Memory

¹²⁴ D’Esposito, M. 2007. From cognitive to neural models of working memory. *Phil. Trans. R. Soc.* 362, 761-772.

¹²⁵ In *The Grand Design*, 2010.

instance is the fruit of an inward directed focus looking for a built-in capacity for language - at least a language acquisition device (...)The supposition that there should be something as 'language', he adds, is not a natural fact. It fits in a framework of Western opinions about the nature of man, the bodily functions discernable from the mental faculties, like an envelope for an inner event.¹²⁶

Another example can be found in Freud on the existence of unconsciousness. He observes that "(...) both in healthy and in sick persons mental acts are often in process which can be explained only by presupposing other acts, of which consciousness yields no evidence".¹²⁷ Here too an assumption becoming a concept in the end acquiring the character of an instance really existing somewhere takes place.

This way the very idea of a faculty together with the concept of *a concept* provides building blocks or instruments in the construction an understanding of the world as it seems to show itself.

Naturalism, naïve realism

The third concept is that of naturalism. It has a similar function of the previous concepts in that it structures the way the environment, the world at large is understood. It at the same time differs because concept and capacity imposes a cognitive structure while naturalism has more of a belief. It is an assumption, stronger even the not questioned conviction that the world as understood corresponds to the world as it is in a natural way. That is not as a new type of belief. The Babylonians, the Sumerians, the Greeks accepted their understanding as a truthful correspondence with what was really out there, as did the peoples in the Middle Ages, the citizens brought forth by the French Revolution, as do contemporary people when thinking about neo-liberalism. They understand and value the way the society is getting organized as completely natural even to the degree that the belief reigns that this type of mentality is a-temporal, a-historical and universal i.e. people whatever the location always thought about life and community in that way. It bears the character of a natural law collapsing with naïve realism. It is a kind of psychological attitude and for the sake of clarity it should be distinguished from naturalism as understood from a more philosophical point of view. In that case the idea is that what exists can be explained in terms of indeed natural laws in strict sense i.e. reduced to the workings on the level of matter.¹²⁸

¹²⁶ Ingold, T. 2000. The perception of the environment...

¹²⁷ Freud, S.. *The standard edition of the complete psychological works of Sigmund Freud*. (J. Strachey, Ed.). Macmillan (p. 2991)

¹²⁸ As proposed by Willard van Orman Quine; defended above inclines to the approach taken by Nietzsche.

The relevance is obvious. The depiction of the world as understood is characterized by the conviction that this is actually the natural way things are. The particularity of it is that this is indeed a conviction, one of possible assumptions or models.

Concluding part I

We return to the proposal suggested in the introduction.

Opening the eyes, launching perception we find a global meaningful depiction. On closer examination this compound scene can be pulled apart in different themes. Each has a particular content asking attention. In third instance each theme shown has a historical provenance which can be retrieved.

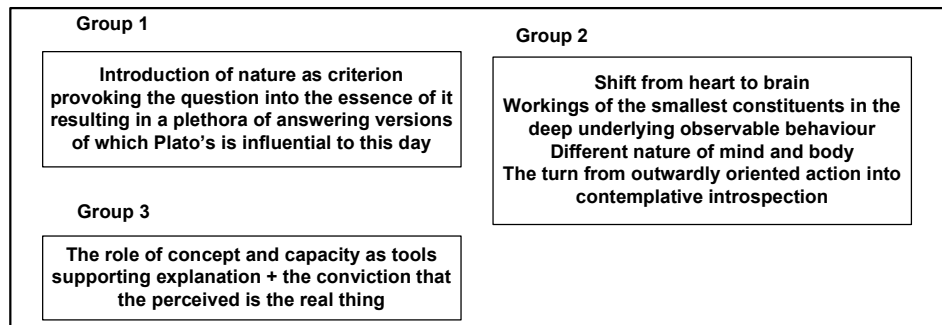
The overall depiction consists of three groups. The first deals with the nature and reach of knowledge. It sketches the introduction of the invariable in time provoking the question into the nature or the essence of it. This provoked a plethora of attempts to provide an answer of which Plato's version was no doubt about it, most influential even to this day. It prepared the ground allowing Galileo to develop a method producing replicable effects.

The second group germinated on the fertile soil of the first. The attempts at answering the question into the nature of the essence were divers and had also to compete with the dominant influence of the Roman Catholic Church. All this resulted in doubt about the human ability of bringing forth knowledge. This divided the focus. It remained partly on the problem about the nature of the essence of that what exists. But in questioning the quality of knowledge a different target took foreground: the abilities of man in generating knowledge, exposing a psychological structure as a side effect. That structure suffered also pressure from social, economic and politic influences. These changed man from a mainly extravert acting out instance into a self controlled and inwardly oriented perspective.

The third group in the global scene is about concepts contributing to an understanding of the world: the concept of *concept* itself and the abilities or capacities considered to be part of the natural equipment of man. It is enveloped by the conviction that the perceived mirrors the real world.

This in a glance is the script determining the boundaries of the actual thinking which characterizes Western culture. In plain language it is the perspective normally taken when interpreting and appreciating what is perceived. Without much nuance it also provides the limits of the blueprint in which the dominant scientific thinking takes place even providing the overall framework in which paradigms change and shift.

**Principles and meaningful contents organizing
an understanding of what is perceived**



The aim was to sketch out in broad strokes what thinking within the boundaries of the box – *thinking in box* - actually meant. The moment has come to explore what *thinking out of the box* could be consisting of.

Part II, prerequisites allowing thinking out of the box

In the first part unveiling historical defined interpretations of how the world got understood was central. The aim in the now following part is to gauge in what way an organism understands the Umwelt taking into account basic circumstances such as biological situation, primary psychological workings and environmental influences. It is an attempt to offer a construction of the perspective determined by basic building blocs and in line with it a narrative *out of the box*.

The question may rightfully be raised if in this case the factors which will be sketched out are free of historical biases? This requires for some comment.

In first instance the references made in the previous part were not meant as a condemning rejection of what is believed but as an unveiling of its historical grounds in order to make clear why is thought what is thought, to make clear that some interpretations accepted as being natural and self evident are not.

Secondly the plausibility of certain arguments is in play. In the present day not many will be convinced by Plato's suggestion of a realm of ideas. On the other hand the theory of evolution by natural selection as formulated in the 19th century is by its persuasive value accepted by many. Another example is Kant's claim that the "das ding an sich" (the thing as it is in itself) supporting the appearance produced by perception cannot be directly known. Until this moment I have not read one argument which could disprove his observation. How could one get around the fact that the characteristics of the body determine in a closing and definite

manner what the organism – any organism - is able to do and to perceive? That argument too is so plausible that it comes as irrefutable.¹²⁹

Concluding what will be offered differs from the previous part in that a meaning given perspective will be construed making use of justifiable basic building blocks.

This enterprise will take two steps.

The first tries to piece together the basic condition the human as a species amongst species shares with at least these most akin. The second step offers a suggestion about the development into the human condition.

Of course this approach is neither neutral nor objective. It is impossible to think of it free of any meaningful context. The angles of view have been mentioned in the introductory lines of this second part: the characteristics of the biological situation, of primary psychological workings and last but not least environmental influences.

The basic condition

The baseline: taking Darwin serious

However simple it might appear Darwin's tree sketch of descent makes it convincingly clear. The human is one species amongst all others. These days that fact is seldom contested. Even pope Paul II allowed in 1996 further research along that line as long as was accepted that it could not answer all the questions. The attention focuses on aspects of anatomy, physiology and genetics mainly. Cognitive abilities also get examined from an observational point of view or in experimental settings probing the abilities of animals. The immanent risk of anthropomorphizing, at least the tendency of comparing the results against the human realisations is often not far away.

But the step to the obvious fact that if the human species along the line of descent shared a common ancestor consequently also a common perceptive cognitive appreciation – in short understanding of the environment is seldom made.¹³⁰

However it goes without saying that in order to get grip on the actual competences characterizing the human, from a methodological point of view it might be a good idea to focus on the conditions characterizing the initial stage of development, the stage the hominina shared with species most akin.

¹²⁹ E. Vermeersch, professor emiritus at the University of Ghent and known for his preference of the scientific approach, admits that it is maybe difficult to refute Berkeley's idea about the impossibility to know the world as it is in itself but that it might be more convenient to accept the existence of it. (Vermeersch & Braeckman, 2013. De rivier van Herakleitos. Houtekiet. P.140)

¹³⁰ Robert Dielenberg is an exception by pointing out "(...) a common root of cognitive abilities". A comparative psychology of human uniqueness: a cognitive behavioral review. Chapter in: R.G. Bednarik (ed.) 2013. Psychology of emotions, motivations and actions. The psychology of human behavior. Nova Science Publishers.

But “taking Darwin serious” should be specified with even more stress.

The statement that “man is a species amongst species” is getting received as a declaration one learns in the same way some event is made known by a newspaper. It is getting received as something beyond doubt but it does not really sink into the reader. Take the statement that “the height of the Himalayas has decreased considerably”. It is an amazing fact in its own right but no one will really be impressed by it. Reading that man is a species amongst species receives a similar appreciation while it should be really shocking. It should be accepted in the way Richard Leaky expresses “man is the fifth ape”, a statement to be taken literally.

Leaving all anthropomorphic vanity aside this is not only a justifiable assumption but it at the same time forces to focus on the following two questions.

If this might indeed be the case, how did the human develop out of the initial situation the capabilities he shows today?

The second question exposes a need not only to list these capacities but also to look into their interrelations. Which capacity, ability or skill is functioning on its own and which provides the necessary condition allowing others to develop?

At this point caution is recommended. Thinking within the constraints of the box one is easily seduced by the workings of the smallest constituents – as the neurological workings - hidden deep in the human. It risks to provoke what deep sea divers call - it sounds so much better in French – “l’ivresse des grands profondeurs” in plain English “raptures or drunkenness of the deep”. This comment does not want to turn down this approach as a mistake. But one should in first instance keep Lloyd Morgan’s cannon in mind saying that no animal activity should be interpreted in terms of higher processes *if* it can be fairly interpreted in terms of processes which stand lower in the scale of psychological evolution. Therefore in this part the focus will be on operations in the public arena, a setting in which each living creature thrives.

This is actually the first line setting in which an understanding of what is going on takes its primary form, an understanding provoking responding behaviour. It is at the same time the most simple setting possibly showing operations taking place in the public field of perception alas often (mis)guided by the idea of deep rooted causes.

In summary: by taking Darwin serious one should be fully aware of the fact that man is an animal amongst animals with all that this implies and further that capacities should in first instance be understood in relation to operations executed in the public arena.

On meaning

When meaning is discussed this always occurs in a particular sense that is, by making referring to something. It is like a quality possessed as in “What is the meaning of life?” or missing as in “this sentence has no meaning”.

Quite useful in this context the Scholastics distinguished “per accidens” from “per se”. It is useful because this contribution wants to stress the discarding of the need for a “per accidens”

form. The life of an organism, any organism does on the lowest level not need the attribution of a meaning. Organism, life and meaning are in a way synonymous. How is this to be understood?

In the last paragraph of “The origin of species” Darwin mentions law like principles applicable to all living species. He refers to the endeavour to survive and to the drive to reproduce. Therewith each and every organism from the very beginning is characterized by a meaningful drive. A living organism, any living organism is not an inert and neutral instance to which a meaning has to be attributed. The organism is driven or primary motivated from the very first moment and that is collapsing with its meaning.

The aim here is to accomplish a sharpening of the awareness that on low level at the same time the core of existence life is driven and by this very fact meaningful “per se”. That is important not only in order to make this point clear but also because it explains quite a lot of basic behaviour.

Embodiment – the first of the 4 E’s

In day to day life and embedded in the contemporary Zeitgeist one considers himself as an isolated well demarcated autonomous unit manoeuvring freely in space. However aware of the fact that the environment is always present it feels like being completely free. Any environment could in principle easily be replaced by any other. The walker considers to be absolutely free from the ground. He is able to walk on any surface he prefers neglecting the fact that he cannot even be thought without a surface supporting him. In the same way birds are thought to fly freely through the air neglecting the fact that it is the resistance of the air carrying them.

But taking facts of ecology, biology and evolution into account it quickly becomes clear that the human, any organism for that matter, is a product of the material and dynamics in which he finds himself embedded. The human is not only made of the same basic physical elements, he continuously relates to the surroundings. He needs to breathe; he needs water to drink, food to eat, and a floor supporting him enabling to move around. This is the basic condition of intertwinement, of unavoidably being part and parcel of a larger whole.

Yet another fact deserves attention. Different species have different bodies. This is a stunningly trivial statement, thus trivial that it risks to be shoved aside without ado. However a different body implies a different way of perceiving and a different way of tackling the burdens presented by the environment. An earthworm perceives another world than a dog or a bird. In case of the human the upright posture and the abilities of the hands are of decisive importance.

Prior to all cultural particularities it defines first line the system or the logic construing the appearance of the environment, it defines the way the human has a world.

So there is a stringent relation between the particularities of the body of a species and of the world experienced. This is contrary to the mainstream beliefs that there is an objective world present irrespective the form any organism could have and knowledge of that world lies within reach of the human abilities.

The plausibility of the determining influence of embodiment is such that to me anyway it seems implausible to refute. McGinn coined the idea of a cognitive closure.¹³¹ In a same line of thinking there should be a suggestion of embodied enclosure. But that would go further than McGinn's suggestion because for this author the world could objectively be known within certain boundaries. Embodied enclosure concerns not only the reach but also the content: what is known cannot be else than a product of the abilities of the organism.

That is what Kant observed when stating that the thing in itself cannot be known. We feel confronted with the phenomenon; the way the world appears to us. The chaotic input¹³² structured by the schemes projected by the mind thus making the world intelligible. But also Kant is falling short by the fact that he focuses on the problems of knowledge while embodied closure does not end there. It encompasses the logic present in countering the burdens of the environment. Transcending the scope of this explanation, in another text I have gone so far as to argue that the whole of the act of knowing is actually grounded in the logic of mediated manipulation. But that transcends the scope of this contribution.

Summarizing: In the previous paragraph the primordial drive to act upon turbulences in the environment has been given. That is what motivates, what moves. In this paragraph the focus was on the form or the body that is getting moved and in particular on its abilities determining the way the environment is getting perceived and motor wise approached.

The Umwelt as a space of meaning

Suppose while observing a bicycle the question arises into the most basic condition in order to allow transportation from A to B. The answer is obvious: a more or less flat surface.

Following the same line of thinking, given the drive providing dynamics and a particular body determining the way that takes form what are the structural features which can be deduced from that condition?

In first instance the expanse of the Umwelt is defined by the reach of the bodily sensitivities or the perceptual channels and, by the reach of the motor capabilities. In this case there is no

¹³¹ Problems in philosophy; 1993.

¹³² The very idea of a chaotic input is yet another product of thinking. It is deduced from the fact that the organism brings forth an experience of perception. There must be something provoking this, but that conclusion is indeed a product of thought.

question of an independent and seemingly borderless frame of reference allowing pinpointing a position by the use of coordinates. In that sense the volume projected by the organism is a function of its embodiment. Secondly the organism takes the position in the centre of this volume unlike that of an observer on the sideline of the scene of action characterizing modern man. Thirdly the scene bears an iconic character again unlike a narrative composed of declarative statements as experienced by modern man.

In summary, the meaning experienced is defined by the primary motivation in particular the condition of it at a certain moment and, the abilities made possible by the characteristics of the body. It could as well be said that the organism is at the centre of a life-world which is getting projected out of the abilities of its body instantiating the organism.

Gestalt

The condition mentioned in the previous paragraph does not fit a description in terms of inert objects caught in a mechanistic pattern based on manipulation. A more adequate approach is offered by Gestalt-psychology. A disruption in the field of perception is evaluated by its relevance in relation to the abilities of the organism and within that frame by the conditions the primary motivation is in at that moment. Sheep do not eat earthworms. Therefore their presence is not relevant, not even as a menace. A lion with a full stomach is not interested in a gazelle even within reach. So what is of relevance takes foreground, if not it vanishes into the background. This bears more the character of a dynamic tension than static positions taking pinned on coordinates.

Modern humans observe the world as a set of objects. They are taking position in the field of vision. On the level discussed here the situation is very different as bird watchers and hunters are well aware of. Not moving is the message. It means that a change in the eye line triggers the awareness of a presence to be evaluated not as much the fact that it is present as part of a static scene. There are of course other factors playing a role smell in particular, but out of the wind and not moving, the chance is considerable that the animal will not be aware if the observing party.

These examples such as relevance in relation to abilities and of actual condition, the figure taking foreground or a shape disappearing into the background and the importance of movement illustrate the proper context to understand the scene at hand.

Phenomenal pragmatism

In the first part it was explained that the causes for public observable behaviour got attributed to the workings of the smallest constituents hidden deep in the internal workings of the body. This is a justified assumption. Research made clear that for instance the level of hormonal secretion

can provoke particular forms and-or degrees of behaviour. But the bias lies in the fact that this type of approach quite exclusively absorbs the general attention, by this repressing other no less important determinants as for instance phenomenalism. This is commonly taken from a pure epistemological point of view as by John Stuart Mill and by Berkeley. For both the thing in itself cannot be known, man is only confronted with the appearance. The tension between the Kantian noumenon and phenomenon is obvious. In the actual context phenomenalism stresses the fact that the way the world is understood *determines* the way the perceiving organism will act upon it. The impact of understanding on behaviour is primordial in this approach. The directive is that in order to understand behaviour one should in first instance try to grasp the way the organism understands what is going on. Examples are ubiquitous. Take a European tourist finding himself in a Chinese train station confronted with announcements presented by ideograms. The tourist will assume meaning but it escapes his understanding and as such does not provoke proper action. Or take two people one once molested the other never abused. Fed by their respective experience they will raise a different understanding of a situation consequently provoking different behaviour. The hormonal level might indeed produce a strong influence but even under this condition the way an organism understands the situation he finds himself in will determine the action taken. This approach might be coined phenomenal pragmatism because what is executed in the public scene in principle observable by all is the most important determinant in the situation at hand. Once falls back on his beliefs not his hormones. It is qualified as being phenomenal because how a scene as phenomenon is understood will initiate behaviour considered appropriate.

This appreciation finds in a sense confirmation in the theory of evolution driven by the mechanism of natural selection. Whatever might be responsible for a change – a mutation on the level of genetics or the effect of a repeated activity, the form brought forth by all this has to prove to be efficacious for survival in real life situations. Here again what is decisive is not the value of a hormonal arousal but the operation made possible by a particular form proving to be valuable or not in a overt scene, that is in a public observable interaction with other factors playing a role in the Umwelt.

The 4 E's

Embodiment as the first "E" has been discussed earlier. The position taken by the organism *extended* by the field of perception and the reach of its motor capabilities has also been mentioned. The moment has come to refer to the remaining "E's".

It is common to think that cognitive activity takes place some where inside the head hidden by the vault of the skull. On closer inspection however the world surrounding the human, any organism provided with a nervous system for that matter, is crowded with stimuli triggering building blocks in the process of cognizing. Imagine a person lost in the countryside. He looks

around hoping to spot something which might be meaningful, for instance a bell tower signifying that there is a village in the vicinity. Indeed one might have a concept of a bell tower in mind. But perceiving one in the distance holds more promise. It signifies that there is some form of urban organization, a bus station maybe. However all these qualifications overlap, embedded as the third “E” focuses a different angle. Take the case of a wanderer. In the Western culture it is *prima facie* understood as someone taking a hike, executing particular movements, a kind of locomotion, in any case the act of a person plain and simple. But taking a step back observing the situation at hand, a wanderer could not be thought of without some kind of surface allowing to execute the act of walking. Actually mentioning a wanderer is not only referring to a person but at the same time introducing elements pertaining to the context allowing to perform the said action. A step further (sic) even the configuration called a path could not even be appreciated as such without a wanderer walking by this giving particular form and structure to the supporting material. Kant already in the Critique of Pure Reason referred to “the light dove, in free flight cutting through the air the resistance of which it feels...”. We look at the bird as if it manoeuvres in empty space neglecting the fact that if there was no air offering resistance there would not be the act of flying at all. There is a delicate but absolute necessary relation between the surface of the wings and the density of the air.

Animals the human included are not cut off from the immediate surroundings, as if they were standing on their own without the necessity of any form of a surrounding dimension. Consider oxygen with other words the air allowing to breath which is a necessary condition to be alive at all, is actually a waste product of the process of photosynthesis. What would we further be without water to drink?

The fourth “E” refers to *enaction*, a relation stressed in the work of Maturana and Varela. The intertwinement of organism and environment has already been mentioned more than once. Enaction focuses on the reciprocal influence. The environment challenges the abilities of the organism; the latter by his reaction changes the former. This active relation leaves traces on both sides. The wanderer acquires a deeper skilfulness, the path acquires an ever prominent form.

For the interested reader chapter 4 “The extended mind” in “How things shape the mind” by Malafouris (2013) can be highly recommended.

Summarizing: the human, any organism for that matter, is not some instance completely decoupled standing in isolation. The characteristics of the body open the environment as a meaningful scene and define the way it will counter the challenges presented by it. Clues taken by what is relevant trigger proper action by which cognition acquires an exterior dimension. It gets embedded in a distributed or extended over the environment. Stringent interactions leave marks on both sides.

Relation regulation

The idea is borrowed from a publication dating from 1967 and composed by Watzlawick, Bavelas and Jackson with as title “The pragmatics of human communication”. One of the axioms formulated holds that all behaviour is communicative. As expressed by the title the authors have human communication in mind. This is however double layered. The use of human language always expresses information declarative in nature. Without exceptions it expresses information *about* some thing or event. However important amongst humans, it is not the layer focused on here. Another axiom articulates the flipside: as all behaviour is communicative it is impossible not to communicate. Only the fact of being present in the vicinity of someone already holds a message for the other party even in the case it is the intention to avoid any form of information giving. Looking into another direction the person expresses “I do not want to inform you, I avoid getting in touch...”. The idea to catch is that human communication in *most* cases transfers declarative information, but in *all* cases and in first instance expresses a meaning on how the relation is experienced. It is what is getting experienced in the proverbial first thirty seconds of a job interview, broader the so called first impression of any contact. It takes place amongst people but as well in the relation between human and animal.

This is not something that can be considered to be executed. It is so primordial that it is part of being alive itself. Being alive equals being meaningful.

It should be noticed that the human shows a particular way of behaving in the vicinity of others he is not familiar with. He acts as if he does not see them, as if he does not want to invest any form of attention into their presence. First of all, this type of behaviour does not express a type of blindness. Following the axiom mentioned it expresses quite explicitly the stance of avoiding unknown others. This is without a doubt a consequence of the shift from “Selbst zu Fremdzwang” discussed earlier. It also is not that improbable that the dense overpopulation plays a role in this curious way of behaving.

Rounding up part II

These are but a few elements describing the basic condition providing the platform from which the human condition had to come into development. It at the same time points out characteristics the human line shared and still shares with the species most akin.

In order to provide an easy to catch overview the features have been listed in a concise form and to stress their particular character it will be accompanied by counterpart referring to mainstream thinking in a simplified manner.

Primordial condition	Mainstream (simplified)
Taking Darwin in its full consequence: man is an species amongst species. Capacities to be understood in relation to operations executed in the public arena.	<i>Man is considered a species apart from all other. Capacities are commonly understood as somewhat etheric abilities emerging from the workings of the brain.</i>
Life is being driven by primary motives which at the same time makes it meaningful.	<i>Life is a condition, a readiness which has to be provided with meaning.</i>
An organism instantiated by a body is a function of the encompassing conditions it came into being. As such an organism is intertwined with a greater whole. The particularities of a body determine the way the environment is perceived and how it is negotiated.	<i>Man is taking a position of isolation in the environment to which he relates in a confrontation. However knowledge cannot be else than brought forth by a bodily being, it is something which transcends the body. The body is divorced from knowledge, the person consisting of both is in turn divorced from the environment.</i>
The meaning of the Umwelt is defined by the condition of the primary motives at a particular moment and by the abilities within reach of what the body allows.	<i>The initial condition is one of emptiness which requires meaning to be attributed to it.</i>
In this setting behaviour is best described in terms of the dynamics of Gestalt psychology.	<i>Man is understood as provided with innate capacities tied to and at the same time transcending the material body. Cause and effect is the explanatory scheme overarching different paradigms (behaviorism, system theory, psycho dynamic...)</i>
Action in the open environment is considered to be first line scene. The way that environment is getting understood directs what action is undertaken. Hence the label "phenomenal pragmatism".	<i>Causes are attributed to the workings of the smallest constituent situated in the hidden deep (working of the neural tissue mainly)</i>
The 4 E's of specifying the whole: embodied, extended, embedded and enactive	<i>Man is understood as an isolated instance tackling the burdens of the environment</i>
Across species any organism evaluates his position in meeting others and regulates the relation accordingly. This is so engrained that is part of being alive itself.	<i>Man can choose to take a complete neutral, anonymous position, not transferring meaning of any kind</i>

Mainstream thinking is not a clear cut case easy to understand. It entails two lines of development, entangled in such a way that one obscures the other. It contains elements such as aboutness or in more philosophical wordings "cette distance nulle" as strikingly coined by Sartre. It is also about the stance of taking the position of an observer on the sideline of the action, the position of Archimedes who provided with the proper tool claimed to be able to tilt the globe. These are characteristics being part of an evolutionary trajectory and not the subject of discussion in this text. But there is also the other strand determined by the particular historic content of the narrative dominant at that moment. Think of Plato's suggestion of a knowable truthful reality or the redefinition of the object as examples given in de previous paragraphs.

Despite the difference of the two lines of development, one having to do with psychology on the level of the human condition, the other with historical twists and turns, the question could rightfully be asked in what way both relate?

From out an extreme form of simplification – alas not all that exceptional, it could be argued that man is no longer an animal and by this cleave a radical abyss between the human and all other creatures.

There are signs however that an intervention of this type would be unjustified. Consider the application of psychology in the supermarket like the installation of moving lights and dispensing particular odours for instance, the lot triggering low level psychological mechanisms. Another example might be a situation of distress in which people react in completely out of rational control but sometimes doing the right thing. This suggests the model of a continuum with on one pole the basic characteristics mentioned in the overview and on the other a civilized person acting rationally and in a social context according the rules of controlled politeness. In what direction the behaviour exposed will move will depend on the urge of the situation. In trusted conditions it will incline into rationality, in others into the direction of low level attitudes. Achieving the latter condition does not ask a lot of effort. Take the situation at the bus stop in case that a lot more people are waiting than room available in the arriving bus. Or stare someone you are not familiar with in the eye for a period of time. Poke your finger in somebody's chest. Take a sip from the drink of your neighbour at the bar. These are all easy to perform actions which might tip over responding behaviour into a basic attitude.

Taking Darwin serious, part 2

Darwin signified the linchpin for a radical change in the view on the evolution and on the position of the human therein, hence the reference. But for what follows the title should better be "Taking the basic conditions serious" by this taking all the aspects mentioned into account. These sketch in broad strokes a basic condition of being bound to the present and local and an understanding of "the world" determined by the bodily abilities. This has profound consequences. It reduces the idea of a world which can be known 'as it really is out there' to a fiction.



The fiction of being able to perceive the world as it really is out there

But “fiction” should not be understood as “the meaning is no more than a fabrication”. It should be appreciated as being a construct whatever the meaningful content.

The basic condition determines that a representation – any for that matter - can

- a) not be else than a construct brought forth by the means the human body disposes of, and
- b) that construct is based on the manipulation of 2nd order stimuli.

As a counter example it could be argued that the earth is a sphere and that this is verifiable from the point of view taken by satellites. This misses the point completely. What else is there than to agree on the fact that the globe takes the form of a sphere? But again that is not the point because the discussion at stake unfolds within a different register or context, not unrelated to the semantic content but however different. The following lines will offer clarification.

Unless miraculous abilities might be assumed, there are three stages to be discerned.

First taking Darwin serious humans are species amongst species, animals amongst animals driven by the same basic motives, finding themselves in similar conditions and provided with similar functional abilities.

Secondly the different types of hominins resulting in the human line showed a development leading to a skill that allowed introducing an experience characterized by a displacement in space and time. Short, they could think about situations outside of the actual context and with building blocks of that kind they became able to compose narratives. These became taken serious at least on two points. A) the scenes offered an explanation of what was going on around them, and b) they guided behaviour.

Three, the previous points allow to conclude that a narrative is not a one on one corresponding depiction, but by its provenance it cannot be else than a construct.

This is one context, the narrative as a product brought forth by the embodiment, whatever the discourse it unfolds. It could be understood as the technical approach in contrast to the semantic offered by the narrative.

The other context refers precisely to the content of the narrative as a meaningful discourse. It is that which guides behaviour or broader it organizes the way the environment, the world at large, will be negotiated in the light of a goal (In the begin state that goal will be acquiring food, realizing shelter, finding a mate). Guided by the version and the action assumed to result in a satisfying way, the version will find confirmation and taken for corresponding how things are really out there.¹³³

Both contexts are tied but at the same time very different issues too.

Is the earth a sphere? Well the interplay between the conceptualisation and the action confirms that version. Other animals will experience a different perception.

Yes but we humans are right!

Of course we are, but that is not the point. Being right is criterion finding development within a certain version and that version may be very successful in the negotiation of all what is, but is a particular version and as such an embodied construct and conceptualisation.

What is the point of that distinction?

Do I agree that the world is a sphere, a statement implying that I also could deny this fact (think of believers of a flat earth)?

Of course I agree, I am a human, a Westerner brought up in a particular conglomerate of versions. I am convinced that the way we understand the world - that is coming down to accept certain versions or conceptualisations - is successful in negotiating the world. But taking Darwin serious and finding it highly unlikely that the human as a species amongst species, possesses over mysterious capacities allowing to transcend the particularities of embodiment, I realize and cannot do else than accept that our appreciation of the world is a particular version and not a one on one corresponding true depiction.

Fewer and fewer people accept the idea of a personal God creator and master of all that is, in a similar way it is a matter of intellectual consistency and honesty to also accept the fact that knowledge is an embodied construct.

Another question is: does it matter for the way we negotiate the world?

¹³³ The assumption is crucial. South American tribes once offered still beating hearts to the sun assuming that there action would provoke a positive result.

In first instance taking this seriously raises a demystifying effect that might lose its magic feeling soon.

In second instance for the scientific practice, it actually does not matter unless... I will come back on this. It does not matter because observing science as a practice it is not about realizing an undisturbed view on the world, but about negotiating the world in a successful way. Returning to the "unless...". It seems that some need the prospect of a clear view on reality as an ultimate motivation to pursue the scientific quest. It is an argument somewhat similar to the need of a personal God otherwise life would be without meaning. In that sense this conviction serves as a giver of meaning.

In third instance it matters really. It fires up the awareness of responsibility. If the human fate and goal is in fact based on the storyline brought forth by the human himself, then he cannot but face the consequence of being responsible for the behaviour and the effects following from it.

This insight unveils and stresses his autonomy to its most extreme border. It is different from the insight expressed in Holy Scripture explaining that man is master of all what is on earth.

Conclusion

Recall what initiated this contribution, a scientist stating that for an idea to be taken serious it should fit in the established body of science. It is an understandable point of view at the same time not quite unproblematic. Wanting to safeguard the scientific practice for all too wild metaphysical digressions it is a justified approach. But at the same it introduces problems of its own especially in the domain of the alpha sciences which are not easily susceptible for rigorous testing and measuring. Evaluation depends on the judgement of peers raising its problems. The pressure to conform to what is generally accepted if not even fashionable is not a matter of all too wild imagination. It could be an example of a real life experiment on the attitude of confirmation as conducted by Solomon Asch but on a grand scale. Understandable psychological mechanisms are in play. The scholar wants to be accepted in the scientific community certainly when an academic career is at stake. This all drives in the direction of cautious conformity, in a sense of self censure restraining creative outbursts. The tendency to float on common sense at the same time slowing down if not blocking creativity facilitates safeness. The issue of competition amongst academics will only be mentioned but it is equally determining what will be esteemed acceptable. Last but not at least, memberships to clubs and networks might play a role of influence.

There is also the argument or rather the directive that progress should be made by taking small steps, the proverbial piecemeal tinkering coined by Popper (1945/1957). This might indeed be the case or rather *a* case – one of multiple options - because there are examples of different forms of progress such as that of a punctuated equilibrium as suggested by Eldridge and Gould (1972). It proposes a slow advance taking small steps however interrupted by a radical jump forward.

Furthermore also a sudden insight might occur as in the case of the structure of benzene viewed in a flash of creativity by Kekulé or the three dimensional organisation of the double helix when looking at a two dimensional ordering on a photograph taken by Rosalind Franklin who quite convenient seemed to be forgotten in the glory flooding Watson and Crick.

It is not the aim to pick on the scientific practice but one should not be all too naïve idealistic neither.

In sum, the endeavour to bring forth reliable interpretations accompanied by safeguard measures preventing all too wild speculation is of evidently meritorious but not a sacrosanct enterprise as often suggested.

The biggest shortcoming however is the blindness for the historic provenance of commonly accepted beliefs.

First of all the province of philosophy and history is often brushed aside quite rashly as not to be taken all that serious often veiled by the accusation of using all too obscure language. Secondly there are scholars effectively focussing on the influence of historic interpretations such as Foucault, Deleuze, Ariès, Clagett, Lloyd, Descola, Agamben to name some. But all these concern in depth studies of a certain period or a particular subject.

The first part of this contribution tried to offer very basic ideas and appreciations which are underlying the accepted understanding of the world, anyway of how Westerners think.

The exercise took the form of integrating meaningful ideas into one picture, ideas so engrained in the understanding that they are taken to be natural evidences. It might be revealing to wake the awareness in the case of day-to-day understanding of the world, but the focus was to point out that the ideas mentioned also support the scientific frame of reference in a self evident way as in for instance the suggestion that there IS a reality out there exactly as we think there is. It could be said that this is no more than common parlance or a kind of a shortcut not really taken serious. However the observation that the terms “mind” and the qualification “mental” are part and parcel of common as well as of scientific thinking is impossible to overlook and contradict that assumption.

In short the goal was to unveil patterns of thought underlying common as well as in scientific thinking.

Where the first part came down to pointing out historic events, the second part drew upon biological, ecological and basic psychological factors opening a very different perspective. The idea was to provide well-founded explanations contributing in part the understanding of human behaviour as an animal and providing a platform which could serve as stepping stone allowing further theorizing about the development of an ape like creature into the modern human we are familiar with. This part provided an illustration for a mode of thinking out of the box.

Intermezzo

Looking into the garden I observe a finch jumping from branch to branch trying to find a meal. I think of Darwin suggesting that all species are to locate in the same tree of evolution. With this in mind I wonder what the world for that little bird could look like and, what does that mean for my experience of the world?

Take the following analogy. People all over the world dress but differ by the type of clothing. Some are limited to a loincloth, others use fabrics based inventions used in space travel. The fundament is the same, the implementation is different. The finch and I have a world in exactly the same embodied way, but we differ in how the input is organized and processed.

The same exercise can be rightfully made in comparison with any type of living species: what is the world of the earthworm, of the butterfly, of the deer of the fish...

Richard Leaky's quote that man is the 5th ape (only) doing things differently confronts.

It urges to be deeply aware of that sameness and equally seriously ponder the question how exactly we are doing things differently.